STRATEGY RESEARCH PROJECT

THE MILITARY ENGINEER AS A CRITICAL PEACE OPERATIONS MULTIPLIER

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ABSTRACT

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While emerging Joint engineer doctrine attempts to define *"peace operations"* roles and missions, current Army doctrine falls far short of outlining the responsibilities and synergistic results possible through the effective integration of the tactical military engineer in *"peace enforcement"*, *"peacekeeping"*, and *"peace building"* operations. This monograph uses the author's experience as an IFOR combat engineer battalion commander in northern BOSNIA as the vehicle to analyze the evolving challenges and possibilities of full spectrum "*Peace Operation*" engineering. The paper focuses on demining, infrastructure assessment and funding, humanitarian projects and the development and execution of a common vision and execution plan among military, governmental, NGO and IO players. It recommends doctrinal improvements and provides guidance to future joint engineers on how to be a *"peace operations"* multiplier working with the other instruments of national power to set the conditions for achieving the strategic endstate.

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ACKNOWLEDGMENTS

I would like to thank the engineer soldiers, Non-Commissioned Officers, and Officers of the 23rd Engineer Battalion whose professionalism, dedication and hard work during Operation Joint Endeavor made this project possible. Their commitment to aggressively undertake innovative, risk-taking and non-doctrinal missions in pursuit of the Bosnian peace process set the conditions for the civil elements of the peace architecture to begin the healing process for the people of Bosnia. My soldiers were the reason I realized the potential of our engineer force to serve as a critical peace multiplier. OPERATION JOINT ENDEAVOR'S peace credentials were the marvelous soldiers of IFOR who selflessly entered Bosnia under hazardous conditions, insured peace and compliance with the Dayton Accords, and safely redeployed to patient and dedicated families in Germany.

Additionally, I would like to thank my advisor, COL Robert Stewart, whose expertise and understanding of ""*peace operations*"" kept me on track and focused. His doctrinal insights, recommendations and editorial guidance have vastly improved my project and I am indebted to him for his critique and time.

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CHAPTER 1: INTRODUCTION

Properly constituted, "peace operations" can be one useful tool to advance American national interests and pursue our national security objectives.

The Clinton Administration's Policy on Reforming Multinational *"Peace Operations"*, May 1994

SECTION 1 - OVERVIEW:

As I sat in convoy formation on the north shore of the SAVA River on the morning on 30 December 1995, I contemplated my upcoming entry into Bosnia with lead elements of the lead maneuver battalion of IFOR. I reflected back on the last two months since receiving word that my unit was deploying to Bosnia, to end the fighting and to preserve peace. I was the Commander of the 23rd Engineer Battalion, the habitually assigned divisional combat engineer battalion supporting 1st Brigade, 1st Armored Division, known as the "Ready First Combat Team" (RFCT).

I sat in my armored HUMMV, the 6th vehicle in line waiting to cross the military floating bridge behind the 1st Cavalry Squadron. I was fully prepared to lead my soldiers as they opened the routes for maneuver forces to push into the unknown Bosnian Serb sector of the Posavina Corridor. The Division, V Corps, and USAREUR Headquarters had done an excellent job of training and preparing units from October through December. Pre-deployment training had included all aspects of the deployment, from engineer aspects of separating the forces to an

understanding of the logistical, personnel, family support and force protection issues of the pending mission. The battalion had just completed a demanding gunnery at Grafenwoehr and a "Military Operations Other Than War (MOOTW)" rotation at the combat training center in Hohenfels. The battalion's troops, NCO's and commanders were ready for the missions ahead.

I felt comfort in understanding my Division Commander's vision, intent, concept of operation and expected military endstate IFOR hoped to achieve by the end of the one-year mandate. My dog-eared set of field pubs, both joint, army and engineer-specific, sat in the back seat of the vehicle. I had reviewed them several times over the last few months, becoming fully aware of the potential doctrinal missions as well as those specified and implied tasks in my deployment order. Engineers were to conduct those military combat missions that supported implementing the military provisions of the Dayton Accord. I was told not to worry about construction of basecamps or mission-creep tasks of infrastructure assessment and repair, nation-building, or humanitarian assistance. I was there to do one thing - combat engineer missions supporting the military provisions of the Dayton Accords.

Three years later I reflect back on that first day on the north side of the river with a different perspective. I possess the benefit and experience of a full year's worth of *"peace*

operations" missions in Bosnia, a year as Chief of Military Engineering for USAREUR, and the strategic and political education of the Army War College. I now know that my mission was much broader than initially envisioned from doctrinal publications. I know that my combat engineer soldiers, units and staffs possessed the ability to act as a critical multiplier in achieving the overall national and international strategic endstate in Bosnia's *"peace operations"* mission.

SECTION 2 - OVERVIEW OF MONOGRAPH'S THESIS:

Engineer involvement in *"peace operations"* suffers two significant shortfalls. First - roles and missions in supporting the various military phases of *"peace enforcement"*, *"peacekeeping"*, and *"peace building"* are not doctrinally documented. Secondly - the potential of military engineers to contribute to the non-military, civil aspects of *"peace operations"*, supporting the other instruments of national and international power to achieve a political endstate, is poorly documented in both doctrine and history. This monograph will focus on the second problem of investigating the potential of the military engineer to act as a critical *"peace operations"* multiplier using the author's experiences in Bosnia as a recent, real-world case study. It is the author's design that a second order affect of the monograph's proof of this potential will

serve to solve the first problem - to document and explain the role the military engineer in *"peace operations"*. The monograph will conclude with recommending some doctrinal improvements and guidance to future joint engineers on how military engineers can serve as a peace operation multiplier working with the other instruments of national power to set the conditions for achieving the political endstate.

SECTION 3 - THE CHANGING NATURE OF U.S. MILITARY CONFLICT:

Since the fall of the Soviet Union and the end of the Cold War, a prominent theory arose that there would no longer be a need for substantial ground forces. It proposed that power projection and national military strategy could primarily be carried out through precision strikes using technologically advanced air and naval forces. This "standoff" approach would reduce the level of U.S. involvement and commitment and thus the requirement for large land forces.[1] Currently more than forty violent ethnopolitical conflicts are under way, one in every region of the world.[2] 48 UN *"peacekeeping"* missions have occurred since 1948 with 16 currently on-going by over 14,500 soldiers from 75 contributing nations at a cost of over $860 million dollars.[3] Despite growing global interdependence, armed conflict remains a common feature of the international landscape, occurring among different national, ethnic, and religious

communities unwilling to live together and settle their disputes peacefully. While the cold war has reduced the risk of conflict between the major powers, it also removed some of the restraints that inhibited conflict.[4]

During the years from 1950 to the collapse of the Soviet Union, the Army conducted only 10 significant deployments, yet since 1990 - the Army had deployed over 25 times. This new paradigm reflects the significance of land forces in supporting the National Security Strategy of engagement and enlargement.[5] The chart below reflects the significant deployments for the last 8 years along the peace support spectrum.

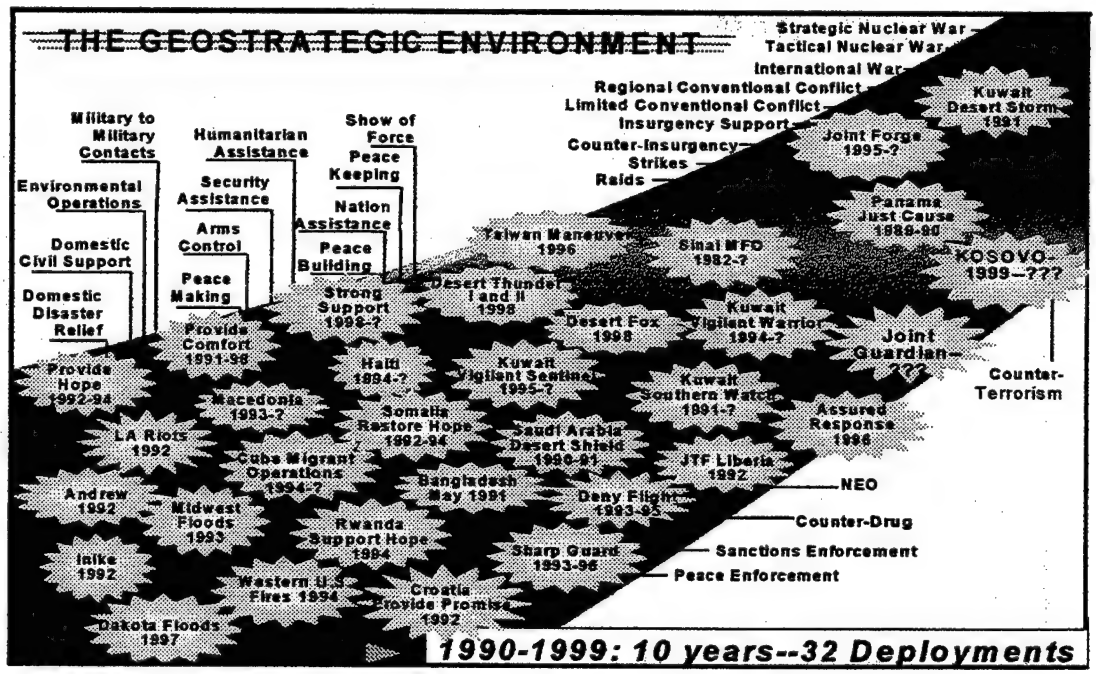

Figure 1-1: U.S. DEPLOYMENT FROM 1990 TO PRESENT

Most future deployments will occur on the lower and middle portions of the continuum of military operations ranging from

disaster relief to global war, where land forces provide unique and essential capabilities, the most options and flexible means.[6] These operations will reflect a conflict between people striving for cultural and ethnic unity, with deep-seated fear, passion and hate. They will require a robust force with the leadership, command and control and ability to interface with civilian governments, non-governmental organizations (NGO's), and international organizations (IO's) that only a strong U.S. military land force can provide. (NOTE: *"International Organizations or **IO's**"* are the new doctrinally correct term for what many existing publications call *"Private Voluntary Organizations or **PVO's**"*).

SECTION 4 - MILITARY'S ROLE IN SUPPORTING NATIONAL STRATEGY:

United States' interest will remain worldwide and will cover many dimensions of the strategic security environment. As a basis for National Security Policy, the National Security Strategy (NSS) will continue to integrate the elements of national power as they apply to the various regions of the world. It envisions strategic actions for supporting democratic growth, human rights, economic cooperation and available markets, and unrestricted trade.[7] The role of the U.S. military, as defined in the National Military Strategy (NMS), is to promote peace and stability and when necessary, defeat

adversaries that threaten the country, its' interests, and its' allies. The shaping element of the U.S. **"Shape, Respond, and Prepare Now"** strategy helps to foster the institutions and international relationships that constitute a peaceful strategic environment by promoting stability; preventing and reducing conflict and threats; and deterring aggression and coercion.

The 1998 NSS highlights the significant security challenges in southeast Europe and the Balkans and how instability in this region could threaten the efforts to bring peace to Bosnia. The U.S. strategy is outlined below:

> The United States has an abiding interest in peace and stability in Bosnia because continued war in that region threatens all of Europe's stability. Implementation of the Dayton Accords is the best hope for creating a self-sustaining peace in Bosnia. NATO-led military forces must contribute to a secure environment in Bosnia and provide essential support for the broader progress being made in implementing the Dayton Accords. The United States is committed to full implementation and success in Bosnia.[8]

Several instruments of United States, United Nations and NATO power must contribute to the overall success of the mission. Key to this analysis is what role U.S. military forces can perform and how they can set conditions for overall success of the mission.

SECTION 5 - THE ROLE OF THE MILITARY IN PEACE OPERATIONS:

The NSS vision for shaping the strategic security environment, combined with the National Military Strategy's

description of the changing mature of *Military Operations Other Than War* (MOOTW), clouds the military's role in "*Peace Operations*" missions. There is little doubt that the U.S. will continue to lead the international community in future conflict intervention. The current NSS cites these conflicts as threats to regional and global stability, potentially affecting U.S. interests. The challenge lies in determining the proper role for military forces in this time of increased Peace Operation challenges. This is especially true of military involvement in developing the shaping and responding strategy to execute the Balkan portion of the National Security Strategy.

The purpose of military supporting forces is to stop the fighting and assist in bringing about a fair and lasting resolution to conflict, not to achieve a military victory. GEN Andrew Goodpaster, in his work on multinational interventions, correctly identifies that:

> Multilateral military efforts should be a subordinate part of an overall campaign that includes diplomacy and humanitarian activities. They must be prepared for combat but their use must be designed to create conditions for a lasting peace. They will need to support political and humanitarian efforts effectively. For these reasons, the subordination of multinational military operations to international political guidance is essential.[9]

Current joint doctrine (Joint Pub 3-0) divides "*Peace Operations*" into three general areas: Support to Diplomatic Efforts (with three supporting tasks), traditional

"peacekeeping", and forceful military actions. For ease of understanding, it further defines these types of operations into three distinct terms: "*Peacemaking*" (diplomatic actions), *"peacekeeping"* (non-combat military actions) and *"peace enforcement"* (coercive use of military force)[10].

Current political thought, reinforced in military joint publications, supports participation of armed forces to set conditions for other organizations to do the *"peace building"* after there is a peace settlement. Military units themselves do not get involved in the civilian aspects of *"peace building"*, as such involvement has nothing to do with their warfighting skills, erodes their readiness, and is done better by other organizations.[11] Recent military operations in Somalia, Haiti, and Rwanda, however, reflect that the military force is often the only legitimate force available with the requisite negotiation and command and control skills to achieve the goals of the peace operation.

Conflict prevention means the reduction, mitigation, or neutralization of the causes of the conflict. The National Military Strategy alludes to the military unit's role as a facilitator and third party actor possible of creating synergistic effects between parties in conflict and the many external international governmental and non-governmental agencies which offer the civil elements of the peace operation

campaign plan. The military by itself can rarely address the root causes of conflict as it often stems from political, economic, social and legal conditions that are beyond the core competence of the military to resolve. Military forces possess great potential; however, to provide a degree of fundamental security and use their unique operational and logistical capabilities to help civil initiatives succeed.[12]

SECTION 6 - HISTORICAL BACKGROUND OF BOSNIAN CONFLICT:

Before making a doctrinal analysis on the conduct of military *"peace operations"* in the Balkans, it is appropriate to provide an historical overview.

For nearly four decades, Marshal Tito's Communist regime in Yugoslavia held in check the centrifugal forces of ethnic diversity. In April 1992, Bosnia and Herzegovina voted to secede from the Socialist Federal Republic of Yugoslavia in a referendum boycotted by the Bosnian Serbs. Comprising approximately 33 percent of the pre-conflict population of Bosnia, the Serbs proclaimed their own "Republic of Srpska", enlisted the vast majority of the ex-JNA in Bosnia into the Bosnian Serb Army, and seized control of more that 70 percent of the land. Bosnian Croats, comprising 17 percent of the population, organized the Croat community of Bosnia and contested control of territory among the Serbs and Bosnian

Muslims. The Bosnian Muslims represented 44 percent of the people forming the recognized government of the Republic of Bosnia and Herzegovina. Vicious fighting, shifting alliances, widespread atrocities, and the techniques of "ethnic cleansing" combined to make hundreds of thousands of casualties, and millions of refugees and displaced persons. In the summer of 1992, UNPROFOR II was established within Bosnia to guarantee the delivery of relief supplies and perform *"peacekeeping"* duties in Muslim and Croat sectors.[13]

The situation continued to deteriorate in 1994 with renewed fighting, murdering, and destruction of property. In an effort to protect the weak UNPROFOR command and control structure and security forces, NATO agreed to enforce the UN no-fly zone over Bosnia. In February of 1994, NATO aircraft shot down four Serbian planes in the zone, the first use of NATO force since its inception in 1949. The Serb reaction was to threaten hostile military action against UNPROFOR. In late spring 1995, 350 UN peacekeepers were taken hostage and UN-declared safe areas were threatened.[14]

By the fall of 1995, faced with worsening economic conditions and stiff international pressure, the political climate in Bosnia shifted and there was willingness among the warring factions to conduct peace talks. U.S.-led envoys proposed a peace plan in September and a general cease-fire took

effect on 12 October 1995. Under the terms of the Dayton Peace Agreement (Dayton Accords), the General Framework for Peace (GFAP) was signed by representatives of the three warring factions. They agreed to the movement into the region of a multinational military Implementation Force (IFOR) under NATO command and operating under a grant of authority from the UN. At the time of the initialing, the Bosnian Federation (a coalition between the Muslim Bosnian Government and the Bosnian Croat Alliance) was scheduled to control 51% of Bosnia, with the Bosnian Serbs holding the balance.

SECTION 7 - NATO SACEUR / CINCEUCOM CONCEPT OF OPERATION:

OPERATION JOINT ENDEAVOR was a clear demonstration that political and diplomatic factors take on even greater importance in coalition and non-combat operations than they do in other types of military missions. Since the beginning of this century, United States military forces have conducted the vast majority of the major operations in a coalition environment with all the attendant political and diplomatic requirements and restrictions.[15] OJE was clearly another coalition effort, however, from a political and diplomatic perspective, it was the first ever out-of area deployment at NATO forces. Additionally, it marked the resumption of direct French participation in NATO military operations. Especially unique was the inclusion of a

brigade-sized Russian contingent in support of an U.S.-led divisional sector. In addition to all 16 NATO nations, the coalition included several Partnership for Peace (PFP) nations as well as Egypt, Jordan, Morocco, and Malaysia. Forces were assigned to one of three Multi-National Division (MND) sectors. MND-North was U.S. led under the name Task Force Eagle (TFE), MND-Southeast was French led, and MND-Southwest was British led. In all, more than thirty nations were involved in the IFOR contingent formed to enforce the terms of the Dayton Peace agreement in Bosnia.

NATO SACEUR (dual hatted as Commander, EUCOM), acknowledged that the first land operation in NATO history would begin in bad weather and over difficult terrain. Force protection was intended to be a major issue in all operations. He stressed that while the UN would authorize the operation, political guidance would come from the NAC and there would be a clear military operational chain to achieve unity of command.[16]

IFOR conducted **OPERATION JOINT ENDEAVOR** in five distinct phases spanning the spectrum of *"peace enforcement"*, *"peace keeping"* and *"Support to Diplomatic Efforts"* similar to current Joint doctrine.

While Phase 1 through 3 occurred on plan, the lack of success in achieving the political, economic and diplomatic stability required by the civil elements of the international

community throughout Bosnia extended the Phase 4-mission deadline twice. Phase 4 operations continue with no projected date for completion of the Bosnia mission.

PHASE 1 - PREPARATION AND DEPLOYMENT OF THEATER ENABLING FORCES: During this phase, planning would continue and actions were undertaken to identify, train, and deploy the enabling force.

PHASE 2 - ENTRY: This phase was to begin with deployment of the main force. The phase was completed when designated headquarters and logistics elements were deployed, secure bases established, control of key nodes achieved, and transfer of authority (TOA) of UN forces completed.

PHASE 3 - IMPLEMENTATION: This phase involved executing the military tasks continued in the GFAP. The plan included simultaneous deployment and initiation of implementation missions. The phase was to end when zones of separation (ZOS) were designated, marked and recorded, and freedom of movement established.

PHASE 4 - TRANSITION TO PEACE: This phase maintained the separation of the forces, freedom of maneuver, and factional compliance with all terms of the GFAP. The termination of the phase depended on success with the military tasks and the presence of organization capable of fulfilling the civil aspects of the GFAP.

PHASE 5 - EXIT: Phase 5 included the orderly handover of commitments to civilian organizations and end when all IFOR elements were redeployed.[17]

Table 1-1: FIVE PHASES OF OPERATION JOINT ENDEAVOR

SECTION 8 - THE CONCURRENT PHASES OF PEACE OPERATIONS:

The author earlier identified the three phases of *"peace operations"*. Latter chapters of the monograph examine the intricate roles and missions of both maneuver forces and

specifically, engineer forces during all three types of *"peace enforcement (PEO)"*, *"peacekeeping (PKO)"*, and *"peace building (PB)"*. *"Peace building"*, as opposed to the activities of Preventive Diplomacy and *"Peacemaking"*, is the only *"Support of Diplomatic Efforts"* mission that involves engineer forces and therefore is the only one of these missions analyzed.

Current doctrinal publications (JP 3-07.3) states that a clear line exists between PEO and PKO - that the conduct of these operations is distinct and a continuum does not exist. Actions do not happen concurrently. Consent, impartiality, and the use of force all determine when and how the mission changes from PEO to PKO. Current doctrine states that PEO forces do not transition to PKO without a requisite mandate or a political decision and appropriate adjustments to force structure, rules of engagement, or operational changes in the situation.[18]

This doctrine is flawed - recent U.S. *"peace enforcement"* missions and *"peacekeeping"* operations have not followed this doctrinal precept. A blend of all three missions is possible and even desired to shape the conditions for the follow-on phase. *"Peace operations"* are not sequential; there is not a distinct line between the end of one type and the start of another. Bosnia was a prime example of a scenario where all three actions occurred at once, only in different proportions as

mandated by the actions of the factions and the conditions set for follow-on operations.

Figure 1-2 plots the main, supporting and sustaining efforts on the vertical scale against time on the horizontal scale and is representative of scenarios where conflicts transitions to peace, such as Bosnia (the author has shown his opinion of the transition dates as they applied to engineer forces in the American sector).

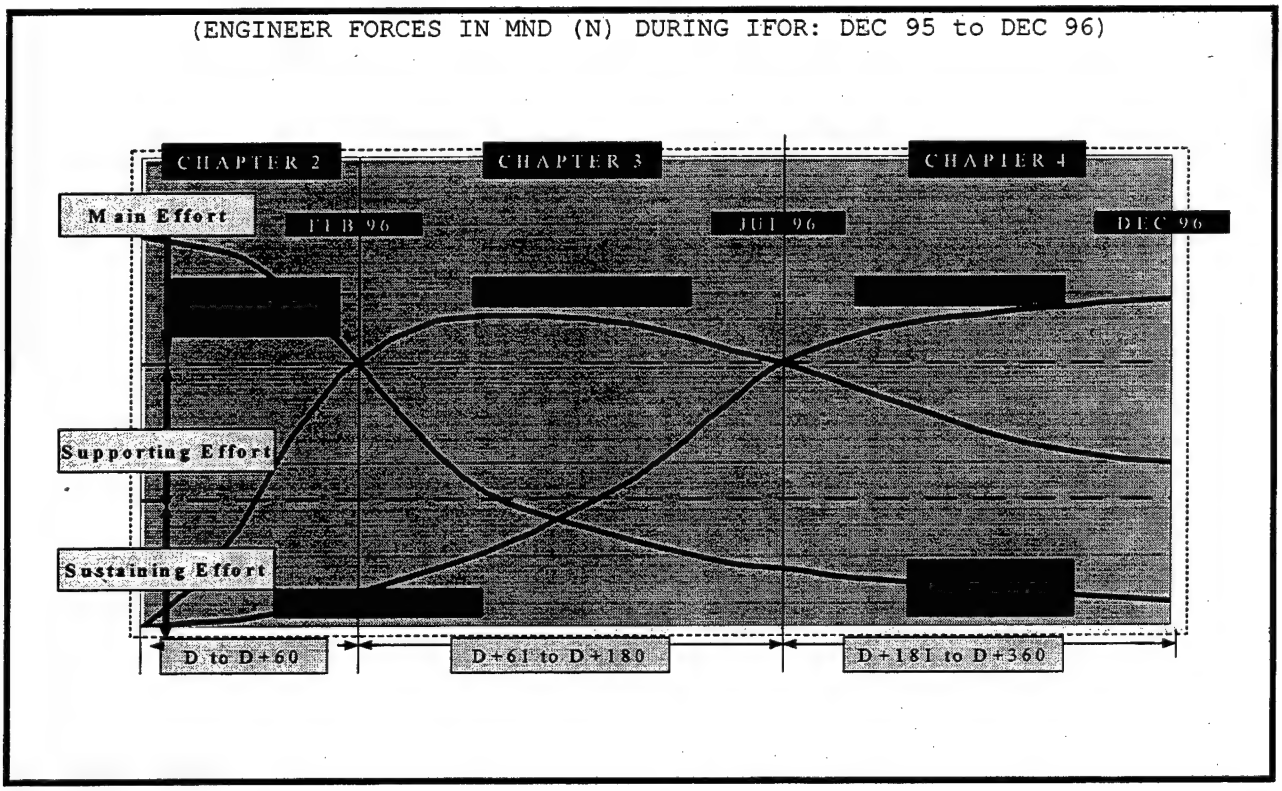

Figure 1-2: CONTINUOUS SPECTRUM OF ENGINEER *"PEACE OPERATIONS"*

The first few months (D to D+60) were evident of doctrinal *"peace enforcement"* missions performed as the main effort, with

only minor engineer operations done in a *"peace keeping"* role as the supporting effort and virtually no *"peace building"* efforts. **Chapter 2** of this monograph will define and explain these PEO missions in the completion of the larger strategic context. This study states that the completion of ten critical PEO missions altered the AOR from combat to non-combat with the successful implementation of the GFAP provisions and the conditions set for *"peacekeeping"* tasks.

From D+61 to D+180, IFOR and specifically the engineer forces transitioned into a *"peacekeeping"* force without any of the pre-requisites (political mandate, force structure, etc.) earlier identified in doctrinal publications. **Chapter 3** will describe how the engineers' main effort focused on taking the lead in repair of infrastructure and demining operations while integrating arriving NGO's, IO's, and external civil elements. *"Peace enforcement"* actions were the supporting effort, *"peace building"* began as new initiatives and funding emerged.

Conditions were set to transition to "Support to Diplomatic efforts" (in the case of engineer missions - *"peace building"*), to become the focus around the D+181 date. **Chapter 4** details the main effort of transitioning the infrastructure and demining programs to international and non-governmental organizations and Bosnian governmental institutions. *"Peacekeeping"* missions

continued as a supporting effort and while still conducted, *"peace enforcement"* missions were done as a sustaining effort.

It is imperative to stress that this continuum can take different shapes based on the success of the current mission, the changing attitudes of the factions involved, and the ability or failure to shape the conditions that allow a transition to the more peaceful state along the peace spectrum. Several historical examples reflect a reversed trend in *"peace operations"* often ending in mission failure. Somalia was a prime example of a humanitarian mission quickly transitioning from *"peacekeeping"* to a *"peace enforcement"* failure. The *"peace operation"* spectrum (figure 1-2) and the arguments made reflect how the author perceived engineer actions in one of the nations' most extensive *"peace operations"* undertakings.

The Bosnia model will be used as a structured template to analyze engineer operations along the peace operation spectrum. This model will explain how the tactical engineer, independently acting in the absence of adequate doctrine and training, is a critical third party actor who possess the potential of a peace multiplier to set the conditions that can achieve the military intent. This paper will use the Bosnia deployment and execution of the IFOR mission to show how engineer actions contributed to the overall national political endstate.

CHAPTER 2: PEACE ENFORCEMENT OPERATIONS (D-DAY TO D+60)

We did not come here just to remove mines and build bridges in the Zone of Separation; we came to this country to remove the obstacles and build the bridges between the people of Bosnia.

LTC Todd Semonite
Brcko, Bosnia

EXECUTIVE SUMMARY: Chapter 2 demonstrates how military engineers can capitalize on poorly documented doctrinal roles to significantly contribute to the attainment of the *"peace enforcement"* military endstate. The chapter uses the first 60 days of the Bosnia deployment as a model to outline how both Joint and Army engineer doctrine is outdated and drastically underestimates the types and potentials of engineer missions. The effective establishment and use of Engineer Joint Military Commissions allowed the initial opening of the Zone of Separation and set the parameters for multi-factional combat engineer projects. The successful completion of operational and tactical mobility, bridging, and construction tasks allowed essential freedom of movement and force protection. The chapter summarizes how engineers assisted in the accomplishment of ten critical PEO missions that shifted the operation from combat to non-combat. With the successful implementation of the military portions of the Dayton Accords, the conditions were set for *"peacekeeping"* tasks.

SECTION 1 - DOCTRINAL OVERVIEW:

"Peace Enforcement" Operations (PEO) define the most dangerous and confrontational type of *"peace operations"* where the use of armed force is necessary to separate combatants in accordance with an international mandate. Implementation is usually beyond the United Nations ability to command, control, and plan and is often carried out by a coalition of countries or a regional organization such as NATO.[19] PEO missions include intervention, operations to restore order, enforce sanctions and resolutions, forcibly separate the belligerents and establish and supervise exclusion zones for the purpose of establishing an environment for truce or cease-fire.[20] Normally armed conflict is more prevalent than strained co-existence when the combatants do not consent to intervention. The *"peace enforcement"* unit may even have to fight their way into the AOR making their future utility for neutral *"peacekeeping"* missions questionable.

Unlike war, *"peace enforcement"* operations are more constrained by political factors designed to bring warring parties to the negotiating table or keep the agreement between them intact. Serious ethnic or regional tensions have caused such deep-seated hatred that *"peace enforcement"* forces will not be able to bring long-term stability to the conflict. The insertion of forces to stop combat may be effective in making the continuation of violence impossible. Combat forces, in and

by themselves, cannot create the conditions for lasting peace that involves the political embrace of peace as more attractive than war.[21] As a result, the contributing nation's political leaders and national public need to understand the complexities involved in the military mission toward a lasting peace and constantly revalidate the reasons the force intervened.

JOINT DOCTRINE:

Emerging joint doctrine on *"peace enforcement"* operations far exceeds any existing doctrine on the complexity and sensitive nature of these missions. This monograph will not replicate the fundamentals, personnel and force tailoring considerations, C2 and planning recommendations, or expected and potential missions that are clearly stated in JP 3-07.3.[22] New joint doctrine provides a sound framework for future *"peace enforcement"* operations providing an excellent capstone structure for the integration of engineer doctrine.

JOINT ENGINEER DOCTRINE:

While emerging doctrine on *"peace enforcement"* is solid, engineer doctrine on *"peace enforcement"* is both outdated and entirely too focused on the limited role of the engineer in sustainment and support missions. Emerging Joint engineer doctrine is beginning to reflect the changing and potentially significant role of the engineer while Army engineer *"peace enforcement"* doctrine is non-existent.

Since 1995 the doctrinal role of engineers in joint operations was inaccurately limited to a civil engineer support role described in only one document, Joint Publication 4-04, Civil Engineer Support. This work outlined the prioritization, planning, and coordination of engineer support requirements necessary for execution of the civil engineering responsibilities of the military services. The scope was limited to the construction of minimum essential facilities, environmental controls, and command and control of civil engineering capabilities and forces needed to support military forces. While civil engineer tasks supporting a variety of high-intensity, disaster and humanitarian support missions were outlined, the publication did not recognize unique combat and construction engineer's potential to assist the commander conduct *"peace enforcement"* operations.

While new joint doctrine (JP 3-07.3) accurately addresses overall procedures and challenges of *"peace enforcement"* operations, the new "Engineer Doctrine for Joint Operations" doesn't come close to the mark of clearly reflecting the associated tasks and considerations for *"peace enforcement"* missions. The publication focuses primarily on force tailoring, organization, and planning while failing to properly address challenges, tasks, and most importantly, the ability of the engineer unit to be an integral partner in overall attainment of

the *"peace enforcement"* endstate. Engineers will continue to face conditions in future conflicts where they must rapidly deploy to an immature infrastructure, assist in the forcible separation of the belligerents, breach and reduce significant obstacles and mine threats, and construct roads and bridges to allow freedom of movement for the maneuver force. Engineer organizations, structures, equipment, and personnel are capable and have the potential to develop achievable and supportable end-state options that emerging doctrine proposes.

ARMY DOCTRINE:

FM 100-23 delineates the Army's role in supporting *"peace operations"* clearly defined in the previously mentioned Joint Pubs. While overall principles, planning, C2, and maneuver force tasks are well defined, the engineer discussion reverts back to the joint engineer approach of only addressing base support and maneuver mobility tasks.

ARMY ENGINEER DOCTRINE:

Engineer series manuals (Division, Brigade, and TF level) focus on the operational and tactical missions in support of high intensity conflict; they do not mention doctrinal missions in *"peace operations"*. Both Corps level[23] and Echelon above Corps[24] manuals fail to address *"peace enforcement"* doctrine beneficial to deployed commanders.

SECTION 2 - *"PEACE ENFORCEMENT"* IN THE BOSNIA MODEL:

In the minds of many Bosnia is and will continue to be a *"peacekeeping"* mission for many years to come. Building on the premise that *"peace enforcement"* missions and *"peacekeeping"* operations blend together at times, the author proposes that the first months of Operation Joint Endeavor fit the doctrinal definitions of true *"peace enforcement"* operations. By using this operation as a model, it is possible to can evaluate the doctrinal missions of engineers as the scenario transitions from *"peace enforcement"* to *"peacekeeping"*.

While the Dayton Accords set the conditions for peaceful co-existence, the initial days and weeks of the IFOR entry were dangerous and uncertain. There was no civilian government in charge, military commanders dominated the political system, and military units were deployed in defensive positions highly distrustful of the enemy forces and agreements. There was no UN forces, NGO's or IO's in the Bosnian Serb areas, and all civilian movements and economies were at a standstill.

It is critical to point out that while Bosnia was an example of actions moving from *"peace enforcement"* to *"peacekeeping"* and *"peace building"* often the trend can be reversed. Somalia and Rwanda were good examples of where initial humanitarian actions and support to diplomatic efforts turned violent resulting in the higher intensity requirement of *"peacekeeping"*. The

doctrinal missions and points made in the monograph are relevant regardless of the directional trend of the military mission - engineers need to understand the strategic and operational realm they are operating in to support continued movement toward peaceful resolution. The Bosnia model will provide an accurate and recent framework to analyze the roles and missions that were performed to fill this doctrinal void of engineer involvement.

IFOR MISSIONS TO ENFORCE THE GFAP.

This chapter discusses the engineer related tasks supporting *"peace enforcement"* missions accomplished in "**Initial Entry Operations**" (Phase I: D-DAY to D+29) and "**Implementation**" of the GFAP (Phase II: D+30 to D+90). It is important to reemphasize that in *"peace operations"* and especially in Bosnia, there is not a clean delineation from *"peace enforcement"* to *"peacekeeping"* to *"peace building"*. The focus in the monograph is on the tasks and the relationship to the attainment of the strategic endstate, not the actual timeframe of completion.

The major U.S. Task Force Eagle tasks for the "**Entry phase**" involved a detailed transfer of authority (TOA) with UN UNPROFOR units; establish a bridgehead across the SAVA to open the LOC; deploy combat forces and integrate with Multi-national forces; conduct force protections and cold weather operations; and deter counter violations of the Peace Agreement.[25] "**Implementation phase**" tasks involved the separations of the factions;

establish, man, and supervise the marking of the Zone of Separation (ZOS); set conditions for freedom of movement; and monitor the clearance of minefields by the factions. While maneuver forces focused on separations and controlling the factions, engineers assumed the burden of the other three missions to shape the conditions able to execute follow-on *"peacekeeping"* missions.

Timelines for factional compliance were set in the GFAP with specific measures the factions had to take and IFOR had to control. Within the first 30 days (D+30), all factions had to withdraw all forces to their respective side of the ZOS and remove all mines, wire obstacles, and fortifications (bunkers and trenchlines). At the 45-day mark, the new boundary went into effect and withdrawing forces were required to completely vacate and clear the transfer areas to include the associated removal of all mines, demolitions, and fortifications. At 90 days (D+91) after IFOR's arrival, factions could place forces into the transfer areas for either resettlement or control.[26]

IFOR IN SHAPING POLITICAL ENDSTATE:

IFOR's mission was clear - to implement the military provisions of the GFAP through the application of military force or the threat of its use, in pursuant to the UN mandate. The military provisions of the Accord, however, focused on stopping the fighting, separating the forces, creating the ZOS, insuring

military and civilian freedom of movement, and monitoring the factions. The short-term compliance with military aspects of the agreement, while essential for overall success, did not ensure the achievement by IFOR of the overarching U.S., UN and NATO political objectives.[27] These objectives included:

1. Sustaining a political settlement in Bosnia that preserves the country's territorial integrity and provides a viable future for all its peoples.
2. Preventing the spread of the conflict into a broader Balkan War threatening the stability of the new democratic states in Europe.
3. Stemming the destabilizing flow of refugees from the conflict.
4. Halting the slaughter of innocents
5. Helping to support NATO's central role in Europe while maintaining its' role in shaping Europe's security architecture.[28]

Table 2-1: U.S. NATIONAL STRATEGY FOR BOSNIA

Attaining these objectives was largely dependent on the effective use of the other economic, diplomatic, political, and informational instruments of power by the international community. This study proposes that only with the completion of several essential specified tasks was IFOR capable of transitioning from a *"peace enforcement"* mission to an eventual *"peacekeeping"* mission. Those tasks included the successful separation of the factions, the storage and monitoring of all weapons systems, the opening of the ZOS and the establishment of

a safe and secure environment with the factions aware of the provisions and constraints of the GFAP. Once this was done, IFOR will have shaped the conditions for the entry of governmental, non-government and private organizations that could successfully implement to civil elements of the peace agreement. Bottom line - once the military provisions were in place, the area stabilized, and the threat reduced - IFOR would have completed the required pre-requisites to allow the civil provisions to be implemented. This, in turn, would provide the potential for the accomplishment of the strategic objective. This chapter will highlight how IFOR engineers, performing unstated doctrinal roles, were an essential element in the attainment of the *"peace enforcement"* military endstate.

DESCRIPTION OF GFAP CONTROL MEASURES:

The Zone of Separation was defined by several complex control measures that assisted *"peace enforcement"* soldiers apply the provisions of the GFAP. The Agreed Cease-Fire Line (ACFL) was the line that factions were defending when fighting stopped and IFOR arrived. In places where the actual fighting did not represent the terms of the actual Dayton Accords, the Inter-Entity Boundary Line (IEBL) was to be created 45 days after the start of the IFOR mission. This line allowed IFOR, the factions, and civilians to understand where the Dayton boundary would be. IFOR engineers marked this line and the 2-

kilometer ZOS edge forming a 4-KM wide ZOS. Any difference in the ACFL and the IEBL created an Area of Transfer (AOT), where land controlled by one faction at the time the Accord was signed would to transferred to the other side, bringing the distribution of land in line with the Accord's guidelines of 51% Federation, 49% SERB.

THE ZONE OF SEPARATION:

Since the conflict startèd in the spring of 1992, the Zone of Separation had grown into a major defensive network comprised of integrated fires, obstacles, and defensive structures. The ZOS was a permanent scar on the face of Bosnia, marking hundreds of kilometers on the now famous outline between Bosnian Serb and Federation forces. Aerial overflights clearly showed the exact position of the warring factions' front line and the complexity of the fortifications.

Nothing crossed the ZOS, all communication and infrastructure was permanently cut. Roads were cratered by demolitions preventing any four-wheel traffic to pass; high tension power lines, phone lines and water systems were destroyed; rail lines were severely damaged with railroad ties used for bunkers; and bridges ranging from 2 lane international to local farm traffic were destroyed beyond any repair. The ZOS could be described to soldiers and visitors with a very clear analogy. It appeared someone took a pair of scissors on the

Dayton map and cut along the IEBL. Two separate and distinct lands were formed that nothing crossed except bullets and artillery shells. Families that had records in a town on one side of the ZOS would never get them again. Wells, power plants, telephone and gas sources were separated on one side from the people who needed those services on the other.

Faction defenses were usually built in depth with three defensive lines: a primary, secondary, and tertiary. Perpendicular to the defensive lines were access trenches normally spaced 500 to 800 meters apart and allowing the rotating soldiers to report to the trench and return home without exposure to enemy direct fire. The primary line of defense was often 200 to 300 meters from the opposing faction and always was the most complex and well developed. Trenches were 4 to 6 feet in depth with minimal side support and no drainage, often allowing several inches of water for which the factions built elevated walkways. Every 100 to 200 meters along the trench was a massive earthen covered bunker built out of logs, lumber, bricks, or anything available, including cars, refrigerators, or furniture. Overhead protection ranged from 6 to 10 inches of soil providing survivability in case of a direct 82mm or 120mm mortar. The bunkers were large enough to house one or two men for normally a three-day rotation and included a wood stove, bed, and kitchen. The front of the bunker had

several direct firing ports providing for a full 180 degrees of observation and field of fire.

The most formidable element of the defense was the minefields. Nothing was standard; there were no set doctrines, techniques, records or type of mines. Minefields were placed between the faction's front line to prevent offensive actions and provide a force multiplier effect for the defense. Roads, trails, rail lines, or any avenue of approach was heavily mined predominantly with Anti-tank (AT) mines and supporting Anti-personnel (AP) mines to deter clearance. Areas of the ZOS which restricted tank movement were mined with AP mines and a small percentage of anti-tank mines.

The second and third line of defense seldom had bunkers or complex trenches unless the area was in a primary avenue of approach and had been the site of significant transition between the factions. Normally factions did not place minefields behind the primary line but areas of constant tension and offensive action were exceptions. Here factional engineers would place minefields between the primary and secondary and even between the second and third trench to delay advancing forces while the defensive force could reposition to a trenchline in the rear. Perpendicular access trenches were booby-trapped with trip wires after the retreating force passed to prevent attacking forces access to pursue the retreating force.

DESCRIPTION OF THE MINE THREAT:

Land mines were used extensively by all warring factions in Bosnia and have been acknowledged by all IFOR personnel as the single greatest threat to *"peace enforcement"* personnel. Initial estimates of mines in Bosnia numbered more than 6 million[29] before IFOR's arrival and was later reduced to roughly over 1 million following extensive documentation efforts.[30] In addition to mines supporting the ZOS, many small point minefields existed at critical checkpoints or strategic locations. The restrictions imposed by the terrain constricted vehicular movement to a limited number of roadways, trails, and lines of communication (LOC) routes. The ability to control these routes was important to each side of the conflict and therefore frequently changed hands. As boundaries shifted, mines were frequently used for area denial; to prevent movement of both military and civilian populations; for harassing of opposing forces; protection of key locations; and the indiscriminate interdiction of LOC's[31]. Techniques included burying mines in dirt roads, paving over buried mines in paved roads, placing horizontal-action mines on trees or walls with remote detonation, and the use of mines on bridges, tunnels, or buildings to create obstacles.

Documentation of minefields during the war depended on the discipline and training of the emplacing unit and resulted in a

wide range of accuracy. Initial forces were untrained civilian militias who placed random pattern and poorly recorded minefields. Emplacement by trained army engineers and intervention by the former Yugoslavia National Army (JNA) brought improved emplacement and recording procedures in Bosnian Serb minefields, but did not significantly reduce the threat.

Standardized minefields records were either improperly used, unavailable, missing or never filed at a responsible secure headquarters. Mine locations were also recorded on the walls of houses, bunkers, pavements or other structures and subsequently were damaged or forgotten.

Most dangerous were mixed minefields in the ZOS between the two primary trenches. A minefield originally emplaced by a defender would have a narrow lane breached by an attacking force and then be expanded or reseeded to hold the newly gained land. Over several years of the land going back and forth, neither side had an accurate idea of the density, type, location, nor fusing and anti-handling devices emplaced.

The mines themselves were from several former Soviet countries, very plentiful and cheap to manufacture and easy to employ. Over 20 types of AP mines and 12 types of AT mines were predominately used with a variety of metal content, fuzing, detonation mechanisms, and activation methods. Kill mechanisms were numerous, most AP mines were blast or fragmentation and

most AT were blast with some number of shaped charge, plate charge, illumination and fuel explosive methods interspersed.

The final variable, which complicated the mine picture, was emplacement time and condition. Buried mines had 4 years of vegetation on top of them degrading their ability to be detected but preserving their ability to kill. Grass and shrubs had grown up around trip wires making removal extremely dangerous. Several winters had caused cheaper mines to have random effects, some times not detonating in cold weather but detonating in warmer months. Several mines that did not detonate when initially proofed exploded weeks later, resulting from the vibration effects of continued adjacent armored traffic.

POSAVINA CORRIDOR:

While Bosnia serves as an excellent case study of *"peace operations"*, the author's battalion sector was one of the most fiercely contested regions of key terrain. An understanding of the political, infrastructure and economic importance of this critical region will enable the reader to understand the complexities of the engineer challenges and potentials.

The Posavina Corridor serves as the critical link between the Bosnia Serb concentrations in the west centered on Banja Luka and the Bosnian Serb concentrations in the east centered on Pale, both which align with the eastern state of Serbia. The corridor was originally occupied by over 60,000 Bosniaks and

Croats who were pushed north and south by overwhelming Bosnian Serbs in the initial years of the war. Bosnian Croats were able to defend two small regions just south of the SAVA River (Orasje and Odzak pockets) while Bosniak forces were pushed south to the southern edge of the river plain. The resulting defensive lines created a dual zone of separation astride the narrow and strategic Republic of Srpska east-west connection that maintained their unconstrained access to the country of Serbia.

Located at the western side of the sector is the critical city of Brcko, originally a Muslim city that was overtaken and cleansed by the Bosnian Serbs. Brcko sits on the SAVA River with road and rail bridges that serve as key LOC's connecting Bosnia-Herzegovina with Central Europe and the lower Danube basin. Serb control of the areas would have resulted in an economic stranglehold over the Bosniak-Croatian Federation.[32]

The Brigade Commander over this area summed it up best:

> Brcko is the linchpin to be able to make this work; the Republic of Srpska entity needs this area to be able to communicate between Pale and Banja Luka. The Serbs don't want to be dependent on crossing Federation territory, so they need access to the Posavina Corridor and Brcko is that access. On the other hand, the Federation looks at Brcko as a natural economic and trading entrepot for Northern Bosnia, a fair assessment. They need to be able to traverse Brcko and get the railway bridge built up which gets you to the railway yards in Croatian, Belgrade and central Europe. The barge port on the SAVA gets you to the Danube and the rest of Europe, so it is very important to the Federation.[33]

The city of Brcko was so contentious that no agreement could be reached at the Dayton Accords, making it the only location in Bosnia that needed to be resolved by further arbitration following IFOR's entry and stabilization of the region.

The Posavina Corridor was controlled by IFOR's 1st Brigade, 1st Armored Division supported by 23rd Engineer Battalion. The brigade had the mission of enforcing the provisions of the GFAP through coordination with three factions: Two ZOS areas with Bosnian Croats in the north, Bosnian Serbs in center sector, and Bosniaks south of the southern ZOS.

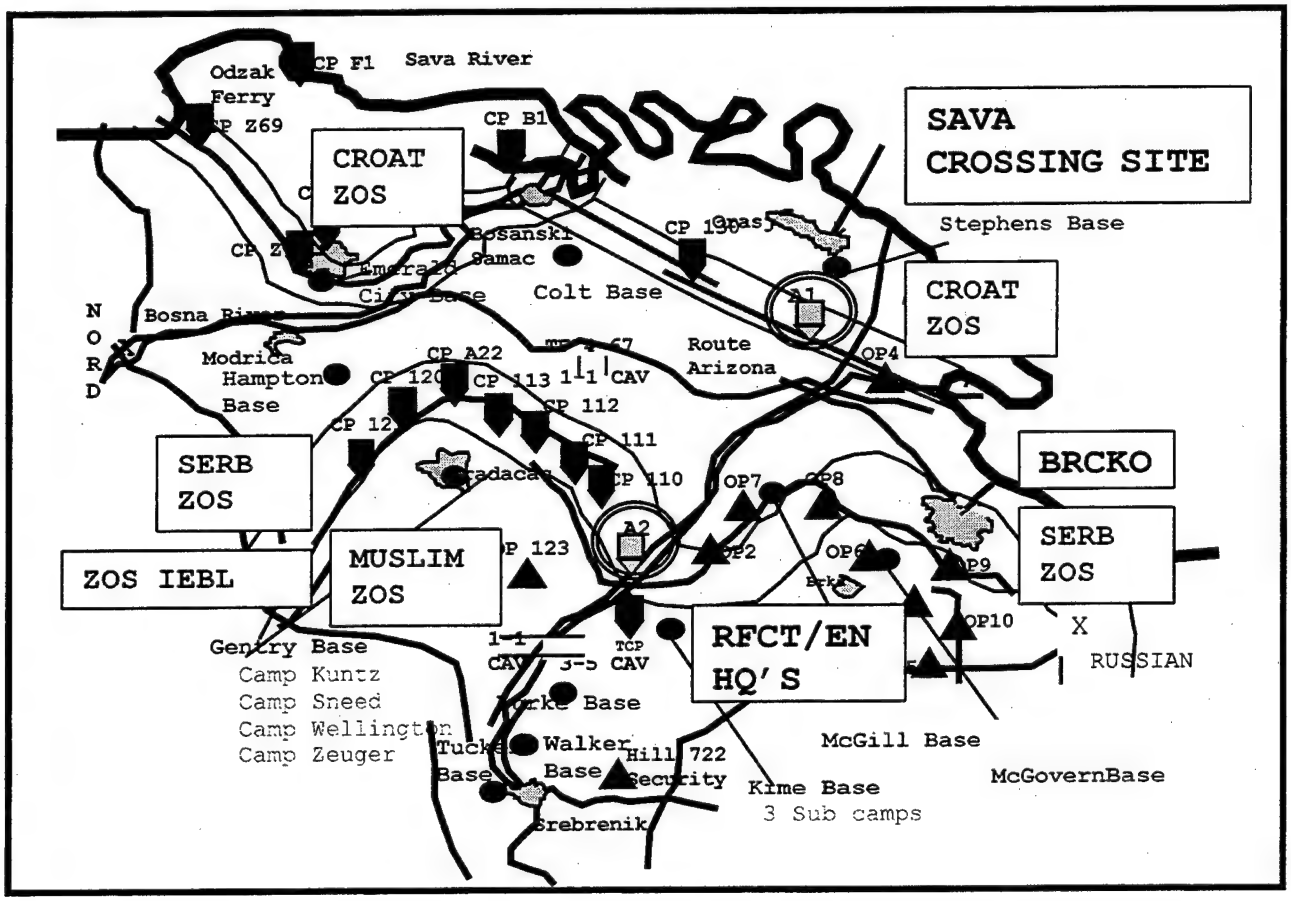

Figure 2-1: BRIGADE OPERATIONS IN THE POSAVINA CORRIDOR

The sector ranged 40 miles east to west and 35 miles north to south, with an IFOR Nordic composite brigade on the west and an IFOR Russian brigade on the east. There were 69 miles of total Zone of Separation to be controlled containing over 2400 bunkers, 1850 minefields and 120 miles of trenchline. The AOR included seven densely populated areas, a major rail line, a border with the SAVA River, and several suspected war crimes sties. Route Arizona bisected the sector north to south, the only route supporting military and civilian traffic from crossing points on the SAVA River.

The Posavina Corridor, then, represented vital strategic terrain for all sides, and none of the factions could be expected to give up control of the region without some safeguards.[34] After three years, the arbitration continues to be delayed with no acceptable solution in sight. Until an agreement is reached and results of the arbitration have been implemented, an outside military presence will be required to ensure that all factions abide by the interim provisions of the Dayton Agreement. This begs the question if efforts of the tactical and operational engineer, through infrastructure, demining and *"peace building"* initiatives, can stabilize the area to shape strategic achievement of the national endstate.

SECTION 3 - ENGINEER COMMAND AND COORDINATION FUNCTIONS:

The five doctrinal missions of engineers in most military operations are Mobility, Countermobility, Survivability, General Engineering, and Topographic Engineering. From the tactical perspective, these five categories range the entire spectrum of engineer tasks. In *"peace operations"* where tactical units, decisions and actions can have operational and strategic implications, it is important to include the overarching leadership function of command and control (C2).

While tactical units at company and below can cause higher order impacts, they are limited in their ability to shape operational and strategic endstates. The author's definition of this critical task is not confined to the daily C2 of tactical units involved in the five engineer functions. The focus is on the role of the unit commander and staff in supporting economic, political and diplomatic aspects of the overriding national objective. By developing innovative and aggressive plans and executing coordinated and synchronized actions to leverage engineer capabilities, it is possible to achieve higher level second and third order effects that support the peace operation endstate. This section will discuss various command and control actions that supported operational and strategic goals.

ENGINEER CONCEPT OF OPERATION:

It is important to the study to understand the unit's augmented task organization and additional non-organic capabilities. Operational deployments normally provided external units to provide supporting functions under engineer battalion command and control. When the 23rd Engineer Battalion crossed the SAVA River with a normal manning posture and a small stay-behind force, the strength of the battalion was just under 400 of the 433 soldiers authorized. Several units were attached to the battalion for either limited duration, specified task missions or for duration supplemental augmentation. To assist initial entry operations and ZOS operations, two corps engineer companies were initially attached to assist in ZOS missions. A 24-man EOD detachment supervised all unexploded ordnance (UXO) missions for the entire year. To assist in initial entry construction, a 400 Seabee contingent, a corps support equipment company (CSE), and a combat heavy construction company were under the control of the battalion to accomplish initial base camp construction levels. Portions of the corps construction company remained the entire year to perform horizontal construction missions supporting base camp and infrastructure projects. At the peak of initial ZOS operations and base camp establishment, the battalion strength swelled from 400 to 900 soldiers and sailors all supporting of the engineer mission.

The size of the Posavina corridor, the immature road networks, the tactical array of maneuver units, and the constant requirement for engineer missions throughout the sector mandated the placement of engineer companies with the maneuver task forces. This effectively spread the battalion across 4000 square kilometers with a driving time of 30 to 60 minutes between battalion headquarters and any company headquarters. Remote sites often had an engineer squad ranging at least 2 hours from battalion headquarters. Logistic and communication challenges were immense. The decentralized nature of operations and fragmented tactical array of the unit placed an especially heavy burden on the battalion's ability to effectively command, control and maintain units to achieve the commander's intent.

JOINT MILITARY COMMISSIONS:

OPERATION JOINT ENDEAVOR exposed commanders to the concept of Joint Military Commissions (JMC's). *"Peace operations"* required substantial interaction between military commanders and belligerent military or political leaders to resolve conflicts or to secure cooperation.[35] Several times during the JMC process, commanders at the tactical level were involved in assembling the factional leaders to initiative actions that would support the political endstate.

> They needed the ability to manipulate a variety of political interests, power struggles, cultural values, personalities, and perceptions of fairness or

> exploitation. They concluded that political interaction between UN, NATO, or IFOR commanders and the representatives of the Bosnian factions would be the key to the success of any agreement implemented under UN or NATO supervision.[36]

The JMC process is an effective and formal tool of the commander to educate factional leaders on provisions of the mandate, review compliance actions and coordinate civil/military actions. The forum is also useful for allowing the former warring leaders to sit down at a neutral table and discuss issues in the *"peace enforcement"* process that need to be resolved between opposing factions or the implementing force. The commander of the unit controlling the JMC is empowered to impose specific requirements and constraints on the factions that are not addressed in the mandate to assist in the execution of the mission. A very effective tool, the JMC process is a force multiplier that allows the commander to use non-lethal tools to shape local actions and preserves his instruments of force for decisive engagements.

MANEUVER BRIGADE JMC:

By the time that early deploying forces occupied the sector, located lodgment positions, and completed initial meetings with factional forces, only one week was left before the D+30 deadlines had to be met. While IFOR guidance stressed continued progress on all requirements, NCA guidance sent down through channels to TFE Commander required compliance on opening of the

ZOS by D+30 or 20 January 1996. The political urgency had more to do with a scheduled televised U.S. Presidential progress statement stating the initial IFOR entry had accomplished requirements on time than any immediate tactical consideration IFOR units experienced on the ground.

While the first TFE Joint Military Commission was conducted by MG Nash in DEC 95 at the division level, a great deal of internal coordination and bi-lateral discussions were required at the Brigade and Engineer Battalion level before the conditions were set for the first Brigade JMC. Consequently, COL Fontenot held the first JMC on 9 JAN 1996 in the Posavina corridor with of the Bosnian Croat, Bosnian Muslim, and Bosnian Serb factional divisional commanders. The provisions of the Accord were reviewed, the IFOR organization and concept of operation was explained, and a common understanding on the IFOR expectations of faction compliance was articulated. While the majority of discussion focused on faction separation, engineer issues addressed concerned minefield documentation, marking, extraction, and joint breaching techniques for initial breaches.

ENGINEER BI-LATERAL ACTIONS WITH FACTION ENGINEERS:

The introduction of engineer issues at the maneuver brigade JMC initiated extensive engineer discussions in the first few months to firmly establish engineer procedures and timelines to support mission completion. The engineer concept of operation

had aligned each unit commander with a maneuver task force that had a specified number of factional brigade headquarters for focused operations. Meetings were conducted on two levels: A Bilateral Meeting (BI-LAT) with the battalion commander and staff and a Work Coordination Meeting between the faction brigade engineer and the IFOR engineer company commander.

The engineer Battalion Commander, operations officer, and supporting Company Commander conducted **BI-LAT's** at the factional headquarters with only one faction present. During the first 60 days, as ZOS route openings, bunker and trenchline destruction, and minefield clearance missions intensified, **BI-LAT's** were usually held about once a week.

The most important function at the initial meeting was the collect of minefield data. Actual maps and minefield emplacement records were needed to build the IFOR mine location maps, as the scale of factional maps did not match the scale of the British TACI-PRINT's that had been left by UNPROFOR. Faction engineers pulled out numerous old cardboard boxes with a varied array of documentation. The actual emplacement record (untranslated) was needed to transcribe the coordinates on to locally-produced factional maps, match the terrain and geological features between faction map and TACI-PRINT, then transcribe the factional location to the corresponding location on the new sheet.[37] The battalion staff cross-leveled known and

suspected minefield locations to documented faction engineer records and attempted through the **BI-LAT** to resolve all discrepancies. The reason this task was most important was that with the location of a minefield, even if off by a few hundred meters, the proper force protection guidance could be offered and precautions taken for IFOR soldiers. No mission by IFOR in Bosnia was worth losing a U.S. soldier because engineers did not know the location of an existing minefield.

Mine emplacement procedures and verification of mine types and characteristics was another major role of initial **BI-LAT's**. While several schoolhouse and UNPROFOR publications highlighted suspected techniques and mines, the diversity of the Bosnia theater required the collection of additional intelligence for dissemination to the entire IFOR force. These intelligence gathering sessions did identify at least one anti-personnel mine that had never been seen as well as several booby-trap and non-doctrinal mine placement techniques unknown to IFOR engineers.

While several informational aspects resulted from **BI-LAT's**, the overriding goal in the early months was to meet the factions on their ground in a non-controversial manner, understand their military and political agenda's, and set the conditions for a long lasting productive relationship. IFOR leaders needed to convince the factions they were a very credible, overwhelming force that would aggressively enforce the provisions of the

Accord, even if deadly force was required. IFOR engineers, therefore, stressed the absolute prerequisite to comply with minefield documentation requirements, aggressively pursue the removal of mines, and destruction of fortifications in the ZOS.

Work Coordination Meetings were the company commander's vehicle to coordinate IFOR engineer teams with faction engineer work parties to accomplish specific operations and tasks. IFOR commanders would conduct weekly meetings on the faction side to determine minefield or bunker destruction missions for the upcoming week as well as the resolution of any minefield documentation shortfalls. This forum proved to be a successful conduit for the entire year as the presence of only one faction made the session less controversial and focused on the execution of engineer decisions from higher level JMC's or engineer **BI-LAT's**. These meetings placed company grade officers in an authoritarian position over factional field grade engineers and served as the primary conduit of communication and trust between IFOR and the factions. They were largely responsible for the significant amount of work accomplished at the tactical level.

While very successful, the **BI-LAT's** and **work coordination meetings** had a limited bilateral focus and were not successful at dealing with issues where multiple factions were involved. By mid-February, several engineer issues had been raised at maneuver JMC's and Engineer **BI-LAT's** that required the

discussion, interaction and synchronized efforts of all factional engineers. The most challenging issues were mine-clearance procedures, timelines, and policy that had to be articulated and understood by all factions. The ground had been set; it was time to commence a brigade level ENGINEER JMC.

ESTABLISHMENT OF THE ENGINEER JMC:

With critical engineer issues discussed at the maneuver JMC's, combined with several factional **BI-LAT's** and unit-level **work coordination meetings**, the stage was set to bring all factional engineers under one roof in the first IFOR Engineer JMC done at the multinational divisional and below level. The first meeting was conducted on 12 March 1996 and chaired by the author. While the agenda listed only engineer specific issues, there were three underlying themes that the engineer command wanted to accomplish. These included information transfer, execution facilitation, and most importantly, establishing the human dynamics and setting the climate which would allow all three sides to work under a common framework.

The first JMC was formal and tense - the three sides had not been together in four years since before the war. Many of the factional engineers knew each other, having either attending engineer training schools together in the early days of the Yugoslavian Army or having worked together in civilian industry. As an example of the complex human dynamics, the Republic of

Srpska and the Bosniak engineer were roommates together in college before the war, two of the most contentious of enemies during the war, and now in the same room discussing peace.[38]

The most essential IFOR objective of JMC's was to set the groundwork that reinforced the legitimacy and credibility of the IFOR force and the authority of the JMC commander to serve as an arbitrator and decision-making authority. At the same time, with ten months of hard work ahead of the group, it was critical to establish a climate of trust, legitimacy, and confidence in knowing that IFOR's intentions, policies and procedures were to be applied even-handedly across all factions. The battalion commander took charge of the meeting agenda and after the two hours of the first JMC, a framework of fundamental understanding in the role of the process was understood and served as a model for remain engineer JMC's both in the brigade and other MND engineer JMC's. The JMC served as the primary conduit for multi-directional information flow and conflict resolution. Several times during the operation this concept was reinforced. As an example, factional engineers would highlight a specific ZOS route that they needed both factional mineclearing actions to focus on due to the presence of overlapping minefields. The JMC process acted on the request, designed a joint procedure, timeline and mine clearance plan, facilitated an IFOR execution-support plan, then reviewed the execution and progress of the

plan at follow-on JMC's. Conversely, in the early months an IFOR convoy had a vehicle go off a road at night into a factional minefield - the JMC process and partnership allowed late night activation of factional engineers to conduct an extraction mission. This might not have been possible if a workable process that allowed dialogue and produced commendable results did not exist early in the PEO process.

Secondly, the engineer JMC was intended to serve as a vehicle to resolve joint factional engineer issues that focused on executing engineer missions in support of *"peace enforcement"* mandates. Any problem that dealt with only one faction and IFOR could be resolve at BI-LAT's, but several difficult issues involved all factions and IFOR. Every JMC meeting included a review of all minefield marking, clearing and bunker or trenchline work completed by the factions to date. The most critical statistic in the early JMC's involved the submission of minefield documentation data, both original emplacement records and maps as well as removal or amended data. Statistical "results to date" spreadsheets by ZOS block were provided to all sides which matched the progress by one faction against another faction, serving as positive reinforcement for significant accomplishment or as pressure for non-compliance. Because Engineer JMC's were a few days before the maneuver JMC with the IFOR brigade commander and the factional divisional commanders,

this comparative analysis served to pressure and inform the JMC engineers of the upcoming statistics and usually brought accelerated compliance by the slow-performer.

The last objective of the JMC was to serve as an information conduit for the common understanding of IFOR issues and factional concerns. At the first JMC, the factional engineers had never seen the guidelines of the Dayton Accords. The Battalion Commander conducted a detailed explanation of IFOR control measures, minefields marking and removal procedures, timelines of Dayton compliance, and the roles of IFOR engineer and maneuver forces. Information from the IFOR Engineer JMC in Sarajevo was disseminated and future plans for civilian demining, countermine training, and non-compliance sanctions were explained. This information flow worked both ways. Factions were concerned about who took out opposing factional mines now on their side of the ZOS: the emplacing unit or the current occupying unit. Factional concerns about lack of training, mine-detecting equipment, and marking materials were answered with IFOR providing assistance and the loan of countermine equipment. All issues were discussed and where possible, a unanimous decision made. If the event of disagreements or threats of non-performance, the IFOR commander mandated a decision and alerted future notification at the maneuver JMC issue level if faction compliance was not accepted.

Over the first 90 days during the defined *"peace enforcement"* phase, several tough and contentious issues were identified and resolved. Outstanding concerns were raised and resolved through the divisional engineer brigade and the Sarajevo IFOR engineer if needed. The ability to affect long term *"peacekeeping"* and *"peace building"* efforts was minimal - at this point the main effort was to force the factions to comply with the military provision of the GFAP by performing mine clearing, route opening, and minefield marking tasks. The process, however, remained the primary conduit of engineer dialogue and conflict resolution. Later chapters discuss how this compliance focus transitions to an infrastructure and demining focus with a goal at setting conditions for external international agencies and NGO's to gain safe access to the sector to accomplish the civil elements of the peace process.

SECTION 4 - SUPPORT TO MILITARY *"PEACE ENFORCEMENT"*:

There were three primary ways engineers supported *"peace enforcement"* objectives at the operational and tactical level: freedom of movement for IFOR forces, destruction of the ZOS, and construction of basecamps, observation points and checkpoints.

MANEUVER FREEDOM OF MOVEMENT:

The first mission of IFOR in sector was to establish the Zone of Separation. Most front line forces had started movement

out of the trenchlines and back to regional storage locations but only route Arizona allowed IFOR movement across the ZOS. Reaching any other front line location required access from internal factional road networks.

In establishing a Zone of Separation, one of the most important engineer tasks is creating cross-ZOS routes to allow maneuver forces freedom of movement. This allows the establishment of maneuver patrol routes to access all areas of the ZOS while creating the ability to construct checkpoints and observation posts to monitor factional movement and actions. In later stages of *"peace operations"*, this freedom of movement assists in the restoration of commercial and civilian traffic along major routes as well as local traffic to assess farmlands.

Initial Route Opening:

The most difficult and dangerous *"peace enforcement"* operation was the task of coordinating the factions and supporting IFOR engineer and maneuver units to execute the JMC decision to open 16 lanes through the ZOS by D+30. While the JMC resulted in higher-echelon concurrence of general timelines and procedures, a great deal of diplomacy and aggressive compliance was forced at the battalion and company level to insure proper execution.

With only Route Arizona open through the 68 miles of ZOS, engineers assisted the maneuver brigade in orchestrating a complex plan to open four routes a day for four days. Each

concentrated on a different sector with completion projected by the afternoon of the Jan 19, 1999. This plan would allow completion of the strategic goal of D+30 timelines by the time of the televised news address the night of the 19th by the President. There was not room for slippage or error.

The overall plan opened four routes in the northern ZOS on the 15th, then shifted to four routes a day in the southern ZOS on the 16th, 17th, and 18th in an west to east pattern. Engineer considerations included in the final selection of each route involved different variables to minimize threats to mine clearance engineers while selecting a route with the potential to rapidly carry a high volume of armored vehicle traffic. Key considerations included the presence of hard surface roads, no gaps requiring bridging, and a high degree of resolution by the factions of minefield location and density.

While techniques, tactics and procedures for the mine clearance portion of the ZOS breaching operation needed to developed, the hardest interaction with the factions proved to be the concurrent nature of the multi-faction operation. An intense sense of distrust existed between the opposing sides of renewed conflict. Factional commanders were convinced that once they removed their defenses the opposing faction would attack and exploit that weakness. IFOR maneuver forces had to assure the factions a security presence and compliance from the other

faction. The result was a "ZOS BREACHING DRILL" developed by the engineer battalion staff and Task Force commanders combining IFOR firepower and protection with factional mine clearance.

The new drill was carefully developed in the field to identify specific tasks of IFOR maneuver and engineer forces in support of factional mine clearing engineers.[39] The drill involved two breaching teams aligned on opposing sides of the ZOS at a pre-set time, positioned on the forward defensive edge of the route to be opened. Between the two teams lay 500 to 1000 meters of cratered road, minefields, berms, bunkers, and wire obstacles. The integrated IFOR / faction team was a linear formation combining factional mineclearing dismounts, IFOR obstacle clearance vehicles and mine-proofers, IFOR armored vehicles for direct fire (to pacify factional anxiety), IFOR engineer squads, and IFOR medical extraction teams. Components understood their role in contributing toward forward movement of the formation and getting to the IEBL. Following the extraction of known mines, an IFOR earthmover (CEV or ACE) had to clear the berms, bunkers and wire on the route and fill in trenchlines to allow continued movement of the beaching convoy.

The factional team wore bright orange "unit road guard vests" to signal to the other side that they were part of an IFOR-sanctioned ZOS breaching team. The opposing teams reached the middle of the ZOS signaling the opening of the route and in

a few instances, shook hands with the same soldiers from the enemy side they had been defending against for the last four years. The robotic PANTHER vehicles and additional M1 roller kits had not arrived in theater yet, significantly limiting mechanical proofing methods and incorporating a high degree of risk. The optimum vehicle was the M1 tank with roller, but only three systems were sector. Second was the Combat Engineer Vehicle (CEV), which had no roller and could only proof by plowing the road with the heavy blade. Any use of the Bradley or ACE to proof would have been disastrous due to the inability to detonate an AT mine without risk to the crew. With only four CEV's and three M1's proofers available, the requirement of breaching four routes by two teams still left the brigade short one system. This shortfall combined with operation readiness rates of involved vehicles to limit proofing to minimal essential traffic lanes. Four minestrikes occurred during these first 16 openings resulting in minor damage to four vehicles (CEV's, Bradley's, and M1 rollers) but no personal injuries.

The tactical details of this drill have been incorporated into *"peace enforcement"* doctrine and are not important for this monograph. What is important is that tactical engineers, working with task force and brigade commanders, developed a new doctrine in a few days using available resources. This tactical drill and the successful execution of all 16 route-openings

accomplished the operational goal of allowing maneuver freedom of movement throughout the ZOS by nationally imposed deadlines. Strategically, it allowed the NCA to announce to the U.S. and the world that IFOR's Task Force Eagle, working under UN resolution in support of NATO security objectives, was on track in support of U.S., UN and NATO vital interests in the region. Tactical success on the ground by engineers who understood that political and diplomatic sphere they were working in contributed to significant second and third order strategic results.

Upgrade of ZOS Routes:

While initial operations resulted in one-lane traffic through the 16 ZOS holes, engineers continued to expand and upgrade these routes to handle maneuver traffic. With the challenge of factional fighting gone, ZOS operations with the factions could now concentrate on bi-lateral factional missions and the execution of deliberate, planned and rehearsed missions. Route upgrade involved aggressive proofing, widening and marking of the proofed lane and improving the road surface.

The possibility of two approaching IFOR convoys meeting on the proofed single lane and having to back out 500 meters forced the rapid expansion of all 16 routes to two-lane proofed width. Engineer leaders at the company level coordinated with factional engineers through weekly bilateral meetings to resolve the work plan, techniques, and mission progress. It was common for a

company to have all three platoons out in sector working the mine clearance missions to expand three independent routes. Because the Dayton Accords required the factions to remove mines, and IFOR ROE prohibited IFOR soldiers from doing this work, the drill evolved into factions extracting and IFOR monitoring. The existing factional mine record was reviewed on site, mine extraction was conducted by hand by factional engineers, extracted mines were destroyed, and IFOR engineers signed the verification document. It was common for mines to be blown in place with demolitions, especially where anti-handling devices, vegetation and soil cover made extraction dangerous.

Successful mechanical proofing was the final validation check on all mined areas to allowed access to IFOR convoys. When all known existing mines on the original minefield document were extracted, factional soldiers would probe the area with sharp poles for randomly placed or undocumented mines. When the factional engineer assured the on-site IFOR engineer leader of the absence of mines, IFOR would request authorization to commence mechanical proofing. Initially this approval was at company level, but following some initial minestrikes by proofing vehicles due to some incomplete work by the factions; the Engineer Battalion Commander later retained this approval.

In early March, the battalion received three robotic proofing vehicles called the Panther. USAREUR and the Unmanned

Ground Vehicle Program rapidly developed a remotely controlled, M-60 tank chassis with Israeli mine rollers. The vehicle could operate by IFOR operator up to 500 meters away or in areas out of the operator's line of sight by video camera. Drills and procedures developed on the ground by tactical engineers allowed the PANTHER to proof unknown areas with minimal risks resulting in a high degree of confidence in a mine-free lane. These vehicles quickly became the validated workhorse by IFOR engineers for both route and area clearance missions.

Marking of the minefield threat proved to be one of the most challenging engineer missions. Pre-deployment training and procedures had stressed that all four sides of mined areas needed to be marked with a NATO standard, two-strand wire fence similar to a cattle fence. Because the breaching of the ZOS route created an opening through the middle of the minefield, the perimeter edges of the minefield were still unknown, inaccessible, and unmarked. The doctrine developed during this phase was to mark the area where the mines did not exist, rather than the area where the mines were suspected. Consequently, at the edge of the successful Panther furrow of lane proofing, engineer soldiers carefully constructed NATO-standard wire fences marked with metal or plastic "MINEFIELD" warning signs. As IFOR convoys began to get used to driving through the ZOS route, the wire fences successfully identified the proofed areas

to prevent IFOR soldiers from drifting into adjacent mines, many of which were only inches on the other side of the wire.

The last mission in the upgrade of ZOS routes was to perform the construction repair of the road surface. It was known before the unit deployed that the road network was insufficient to hold IFOR traffic. Faction trenchlines had cut the road surface and destroyed the required subgrade to support tank traffic. IFOR engineer vehicles brought in gravel, filled trenches, and compacted the subgrade, thereby restoring the traveled road surface to an acceptable 15-MPH travel speed. Trees and shrubs that had grown over the road were cut back at the minefield wire edge and any berms, bunker-debris or barriers (old buses, vehicles, armored vehicles) were cleared to allow the unimpeded movement of two-lane IFOR convoys. Severe winter weather conditions and inadequate roadside drainage features, combined with a high volume of M1 and Bradley traffic, made most ZOS routes dangerous for even HUMMV convoys. Through innovative solutions to the problem such as limiting traffic on certain routes, improving drainage structures, and creating heavy and light vehicle lanes in checkpoint areas, maneuver convoys were able to execute missions. Routine assessment, maintenance and repair convoys on these routes became a requirement for both divisional and attached corps-level engineer units.

Military Bridging:

Once the SAVA river float bridge was in and under control of engineers north of the brigade AOR, *"peace enforcement"* military bridging missions were limited to the emplacement of tactical U.S. Army bridging to either replace damaged bridges or upgrade the load class of existing bridges.

The numerous streams feeding the SAVA River tributaries in the Posavina corridor created hundreds of potential bridge missions. Only eight primary roads in sector were designed to support military load class 60 traffic. The majority of the areas adjacent to the ZOS where maneuver forces needed to patrol were connected by secondary or unimproved roads and associated class 15-20 military load class bridging. A detailed area assessment of desired Task Force patrol routes against required bridge upgrades and available bridge stocks was conducted at the engineer company level. To support the maneuver brigade intent and TF CDR analysis, the engineer battalion allocated eight additional theater-loan AVLB bridges to the three engineer companies to allow an available pool of 20 AVLB's for the corridor mission. Engineer forces emplaced all 20 bridges in either one of two techniques. Mandatory patrol routes that had a damaged bridge required the placement of an AVLB bridge with required tie-down and anchorage systems. Routes that crossed a bridge of low class received an AVLB to "overlay" on top of the

existing bridge. With only a one-year duration mission, limited engineers and no peace-building budget at this time, the civilian bridge underneath had to be maintained to allow future freedom of movement after IFOR's departure. The extensive use of AVLB's worked well during the first 90 days; the inability to upgrade civilian bridges and the increased convoy presence of IFOR patrols forced all 20 bridges to remain fully committed. The total scope of the mission involved the placement of over 70 AVLB bridges on different routes for the movement of IFOR traffic within the Brigade AOR and TFE sector.

One unique challenge that was not envisioned was the non-compatibility of tactical bridging to integrate with existing public transportation and rural vehicles. Many of the required AVLB's were not across ZOS routes but were lateral supporting roads between towns of a given faction. Consequently, commercial bus traffic needed to cross the AVLB to move civilians from one town to another. The slope of the AVLB ramp did not allow the civilian bus to negotiate the bridge. Secondly, an AVLB has a 24" gap between the two tread sections connected only by cross-members. Most rural traffic in Bosnia was one-horse wagons and carriages. A photo in the national media of a Bosnian horse caught inside a TFE bridge quickly alerted the command to the diverse nature of the *"peace enforcement"* challenge. While IFOR's focus was to move

Bradley's to patrol violations of the GFAP, the focus of local civilians was to get to their fields and start spring plowing.

IFOR's disruption of civilian movement began to build into public sentiment of IFOR "living on top of the local populace", imposing IFOR's systems to degrade the Bosnian way of life. Several mayors raised issues and civil affairs personnel were gathering growing discontent. This problem was resolved with the development of some unique engineer solutions. The bus ramp dilemma was fixed by IFOR engineers constructing dirt or steel extension ramps that provided a more gradual slope up the bridge. The AVLB opening problem was fixed with an innovative solution designed by engineer NCO's creating a strong wooden coverplate that was attached to all emplaced AVLB's. The AVLB decking system was designed, constructed and emplaced on sixteen primary bridges enabling IFOR patrols and civilian traffic to cross the military bridge safely for the duration of the IFOR mission. Both examples demonstrated where the completion of *"peace enforcement"* tactical missions had significant social and political ramifications on the local populace. Failure to understand the linkage between tactical success and related civilian discontent and economic hardship could have reached operational proportions. The application of flexible and innovative engineer solutions satisfied both requirements - and stressed the need of continued understanding of negative second

and third order effects of *"peace enforcement"* actions and how to turn them into positive information operations results.

ENGINEER WORK IN THE ZONE OF SEPARATION:

Once essential freedom of movement routes and mine clearance operations were completed, engineers began a myriad of tasks to establish and define the ZOS, remove mines, and demolish fortifications in the ZOS. Only through clear identification of the ZOS and destruction of the massive trenchlines and bunker systems could the segregated country of Bosnia ever hope to be truly reunited without a permanent scar of war.

Marking the ZOS:

ZOS Marking served as a critical faction and civilian control measure to replicate the Dayton-agreed line on the actual ground in Bosnia. Tasks to establish the ZOS included marking the outer ZOS boundary, areas of transfers, and most importantly, the Inter-Entity Boundary Line (IEBL). Engineers units worked closely supervising factional engineers to place temporary and semi-permanent markers to clearly identify the respective lines and zones. Maps and documents approved in the Dayton Accords were used to identify exact positions on the ground with satellite to ground polar locating devices, eliminating any question of accuracy by the factions. Marking was focused on areas where a control measure crossed a route, track, or rail line. Areas where mines were suspected and not

cleared during initial route openings were left unmarked until follow-on demining provided access to the areas. The IEBL was marked with semi-permanent survey markers (similar to a gas line marker) and the IEBL marked with fluorescent orange tipped pickets. In areas where the control measure divided a home, church, or edge of a road, the Dayton Accord allowed for a 50-meter shift recommended by the emplacing engineer and approved through channels by the CDR, TFE. The endstate was met on time with IFOR engineers and the factions completing the marking of the IEBL by D+45 and the ZOS boundaries by D+91.

Reduction of Bunkers and Trenches:

Although factions quickly began redeploying out of the defensive networks, one of the significant countermeasures against renewal of hostilities was total and complete destruction of the bunker and trenchline systems. The maneuver commander's intent was to insure continued separation of the forces; removing all fortifications preventing a return to hostilities and renewed fighting. It was the author's opinion that total annihilation of the defensive network would serve as a strong deterrent to factional soldiers, requiring total reconstruction in the absence of good weather and available materials. From an engineer perspective, this meant the complete destruction of ZOS fortifications. In an effort to prioritize and monitor progress in ZOS areas, the ZOS was

subdivided into 3 to 5 kilometer work blocks that were numbered with a north and south identifier.

At weekly work coordination meetings, engineer company commanders met with the factional engineer to determine the focus block and work schedule for the week. Every day, each company deployed two platoons (totaling six platoons from the battalion) that linked up with faction engineers, moved to the focus site, and conducted demolition missions. The size and complexity of the bunkers would often required 20 to 30 pounds of explosive surgically placed at critical structural points in the bunker. Systematically, the platoon would work their way down the trenchline blowing 20 to 40 bunkers per day.

Because factional engineers were also busy elsewhere in the ZOS removing mines, many times only one factional engineer who was familiar with the trenchline accompanied IFOR soldiers. To insure IFOR safety from mines and booby-traps, the factional engineer would enter and proof the bunker to insure there was no threat to IFOR soldiers, who would then begin to rig the bunker for demolition. During the first 90 days of Operation Joint Endeavor, the battalion and factional engineers destroyed more that 1200 bunkers in the most fiercely contested sectors of the ZOS. At the end of the first 180 days, engineers had completed the mission by destroying over 2400 bunker structures across the 68-mile section of ZOS the brigade controlled.

Trenchlines were destroyed to prevent further use in renewed fighting. With over 250 kilometers of trenchlines in sector, the amount of manpower required and the problems involved resulted in this mission taking a much lower priority to other on-going engineer missions. Poor soil conditions and adjacent minefields prevented IFOR's ability to move mechanized construction equipment to the site to push in trench walls. Priority work focused on trenches overlooking critical routes and facilities. Significant wet weather, combined with the demolition effects from the bunkers, caused most trenches to collapse during the spring and summer. The decision made to allow natural deterioration of the trenches prevented a threat to IFOR soldiers and generated savings in engineer man-hours.

CONSTRUCTION OF MILITARY SUPPORT FACILITIES:

Combat-related missions establishing of the Zones of Separation and freedom of movement dominant the ways that engineers forces contribute to the overall political objective. General engineering and survivability missions, however, can consume more than 50% of the specified requirements of deployed *"peace enforcement"* engineers. This section will briefly highlight only two of those missions - basecamp construction and checkpoint and Observation Point (OP) construction to provide an overview on the challenges to the engineer force.[40]

Site, clear and construct basecamps:

Pre-deployment guidance from Corps and USAREUR staff specifically instructed deploying *"peace enforcement"* units to focus on GFAP missions, not base camp construction. "Do not concern yourself with basecamps - they will be built before you arrive in Bosnia" was the quote from a high-level staff officer.[41] As the lead elements of the engineer force assaulted into Bosnia, they began clearing routes towards Tuzla along Route Arizona. It was immediately recognized that the divisional engineer battalion commander, dual-hatted as the maneuver brigade engineer, was going to serve as the brigade Director of Public Works (DPW). This was not by design, but primarily because no one else in the force could build base camps for the 4500 soldiers assigned to the maneuver brigade.

The initial USAREUR base camp concept mandated only three base camps for a brigade team which conceptually was the most manpower efficient concept for an extended mission. However, applying this template to the ground conditions demonstrated that this was not feasible, both in terms in physical location and in terms for supporting the commander's intent for *"peace enforcement"* operations. The agrarian infrastructure and poor soil conditions, combined with harsh winter conditions, prevented the construction of massive basecamps for 1200 to 1800 soldiers on Bosnian farmlands. From a tactical standpoint, it

also limited all brigade operations to only three locations, minimizing the desired broad presence in the ZOS and increasing patrol convoy routes throughout the sector.

Engineers spearheaded a brigade effort of finding suitable locations that supported the tactical array of units in critical locations in the ZOS while also possessing adequate potential for basecamps construction. Maneuver commanders were involved in the identification and selection of these sites. Consequently, the engineer battalion staff and unit commanders focused on locating existing but damaged facilities with adequate hardstand and road networks to support company-sized units. A decentralized plan provided better lodgment potential early in the operation to get units and armored vehicles out the mud while increasing the overall number and dispersion of the brigade force. The final plan arrayed the brigade's units evenly across all sectors of the ZOS supporting the MOOTW concept of impartiality and fairness. Eventually, eight base camps and three forward operating sites were developed.

Initially, camp designs were created on HUMMV hoods and construction managed on the back of a file folder. Engineers created bed-down standards and construction phases separated in three tiers of escalating force protection and comfort. The creation of construction management systems, the assignment of over 400 extra construction engineers, and the equitable

distribution of over $10 million in initial contracts across all factions' economies allowed for completion of the *"peace enforcement"* construction endstate. After the first 90 days 15 major camps and six remote facilities had tier 1 and 2 essential basecamp and force protection construction completed.

Establishment of Checkpoints and Observation posts:

Checkpoints on civilian routes are designed for implementation forces to slow traffic without stopping it, allowing the *"peace enforcement"* units to observe and report traffic passing from one zone to another.[42] : The IFOR brigade commander developed an aggressive plan of IFOR checkpoints and observation points to conduct *"peace enforcement"* operations throughout the Posavina Corridor during the initial 90 days of Operation Joint Endeavor. During the initial JMC and follow-on meetings with both faction and civilian leaders, there was a strong dependence on the presence of IFOR checkpoints to monitor and control movement of an opposing faction. Even during the initial opening of the first 16 ZOS routes, the guarantee of IFOR checkpoints was used as a diplomatic tool to allow factions to remove their defensive positions. Critical control points (the end of the Brcko bridge), as well as sectors with routes too numerous to man required checkpoints, required an observation post. These mine-proofed areas provided an IFOR presence in the sector, constructed with limited defenses,

vehicle positions, and fire support plans. The initial architecture to control 68 miles of ZOS included 16 checkpoints, 2 traffic control points, and 10 observation posts.

Engineer missions in support of these *"peace enforcement"* missions included the design and upgrade of the "chicane" or "weave" lane; the construction of the checkpoint defenses; and the construction of troop support facilities. USAREUR maneuver units had completed substantial training throughout 1995 on the use, construction, and control of checkpoints in Combat Training Center (CMTC) MOOTW training scenarios. Engineer units were trained on how to construct the vehicle inspection lane, wire obstacles, crew served weapons positions, and armored vehicle revetments. Areas subject to IFOR soldier operations in BOSNIA had to be cleared of mines and adjacent mined areas marked. Armored and infantry units manned the checkpoints with platoons for one-week durations, requiring engineers to construct GP medium tent floors, latrines, bunkers, fighting positions, generator and light set systems, and graveled parking locations.

SECTION 5 - TRANSITION TO PKO MAIN EFFORT:

This chapter has identified roles and shortfalls in engineer *"peace enforcement"* doctrine by providing an overview of potential missions and challenges in a complex PEO operation. Through the experiences and lessons learned in the Bosnian IFOR

execution, the roles of engineers have become much clearer while concurrently more interwoven into the larger operational goal.

The focus of all engineer operations during *"peace enforcement"* must be the successful completion of key supporting tasks to the maneuver unit's mission to separate the forces and insure the provisions of the international mandate. In Bosnia that mandate was the Dayton Accords and the GFAP. Doctrinal missions at the tactical level (company and below) of mobility, survivability and basecamp construction, while not explained sufficiently in existing doctrine, remains within the potential MOOTW tasks expected of a divisional engineer unit. The primary deficiency in current doctrine and training concerns the role of the engineer Battalion Commander and staff serving as a maneuver brigade engineer or even the divisional engineer - the case in TFE since 1997. This experienced senior engineer command and control capability is a critical player in conducting shaping operations necessary to transition *"peace enforcement"* operations into *"peacekeeping"* operations. Innovative use of engineer capabilities, units, contracting potential, and negotiation skills; combined with maneuver unit's enforcement of the mandate, can produce synergistic results far exceeding the specific task of the executing unit. Engineers need to understand how setting the conditions at this stage allow for political institutions to gain legitimacy, economic rebirth to

occur, infrastructure and freedom of movement to heal the scars of separation, and the clearance of mines and obstacles to turn battlefields into areas for resettlement and revitalization.

Where is the line between *"peace enforcement"* operations and *"peacekeeping"*? When did the transition take place in Operation Joint Endeavor? As earlier stated, joint doctrine defines *"peace enforcement"* operations as the use of force to compel compliance with a mandate, while *"peacekeeping"* are military operations undertaken with the consent of all parties to monitor and facilitate the implementation of an agreement.[43] No definable event marks the transition - there is a blending of each type of operation into the other over time.

It is the author's position that the objectives needed to transition for PEO to PKO were met around D+60, marking a shift from a majority of *"peace enforcement"* operations to a majority of *"peacekeeping"* operations. The accomplishment of the following ten conditions justifies this rationale:

1. Faction leaders met, knowledgeable on IFOR and GFAP.
2. ZOS opened for IFOR freedom and movement.
3. Faction weapons out of ZOS, monitored in storage.
4. IEBL, AOT's and ZOS boundaries marked and patrolled.
5. IFOR architecture for monitoring compliance set.
6. Joint Military Commissions established (BDE / ENGR)
7. ZOS destruction of bunkers, minefields progressing.
8. Lines of communication operational and monitored.
9. Basecamp and checkpoints established, forces secured.
10. Areas of transfer vacated, gaining faction controls.

Table 2-2: PEACE ENFORCEMENT ACCOMPLISHMENTS BEFORE D+60

The attainment of these accomplishments marked the transition from an environment of war to an environment of non-violent coexistence and stability. Perhaps IFOR was not any closer to long term peace, but the conditions had been set to make a return to war very hard. The challenge at this point was complex. The only way BOSNIA could stabilize was with a very strong, robust external military force to insure the sustainment of these objectives and to control the behavior of the factions. IFOR had done little to allow the political, economic, diplomatic and informational instruments of the international community to set the conditions for peace without a *"peacekeeping"* force. IFOR had accomplished the initial milestone; to make Bosnia safe and stable to allow the other non-governmental and international organizations to enter the country. These agencies could then accomplish their mission of creating a stable government, economy and infrastructure that would allow an eventual peaceful co-existence of the factions without IFOR. Chapter 2 describes the *"peacekeeping"* aspects of the IFOR mission from D+60 on and identifies ways in which engineer forces can facilitate the accomplishment of the military and political endstate of a peaceful Bosnia.

CHAPTER 3: "*PEACEKEEPING*" OPERATIONS (D+61-D+180 DAYS)

"Peacekeeping" is not a job for soldiers, but only a soldier can do it.

Former UN Secretary-General
Dag Hammerskold

EXECUTIVE SUMMARY: From D+61 to D+180, IFOR and specifically the engineer force gradually transitioned into a *"peacekeeping"* force without any of the pre-requisites identified in doctrinal publications. This chapter describes how the attainment of *"peace enforcement"* objectives allowed engineers' tactical missions to transition from compliance to monitoring and observing. IFOR engineers' main effort could now shift to strategic objectives as the military engineer force assumed the lead in repair of infrastructure and demining operations. Assessment systems were established to analyze projects that had substantial potential for achieve economic, humanitarian and political objectives. A prioritization system was developed which categorized projects against international and national impact with involvement by more than one faction or political entity. Ten engineer projects are used to demonstrate the political and economic accomplishments achieved through engineer repair. Arriving IO's, IO's, and external civil elements were integrated into the military led effort, setting the stage for future transition to *"peace building"* initiatives.

SECTION 1 - DOCTRINAL OVERVIEW:

"Peacekeeping" Operations (PKO) are military actions undertaken with the consent of all major parties to a dispute designed to monitor and facilitated implementation of an agreement and support diplomatic efforts to reach a long-term political settlement.[44] This differs from the previously defined explanation of PEO where consent is not necessary and units "compel" rather that "monitor and facilitate". The current doctrinal position in joint publications states that a very clear line exists between PKO and PEO. Operations are separate and distinct and a continuum does not exist from one to the other. PKO and PEO take place under different circumstances, characterized by three critical factors of consent, impartiality, and the use of force.[45] Doctrine mandates that a very conscious shift in operations and military forces takes place when transitioning from one operation to the other.

The Bosnia model and operations to date reflect that such a doctrinal position is not realistic. While governmental leaders representing the three factions "consented" at the strategic level to the Dayton Accords, there was certainly violent resistance on the ground at the tactical and operational level. The robust force that initially deployed was able to compel compliance with the GFAP as explained in Chapter 2 from D-DAY to D+60. There were, however, many instances in the initial months

where consent was not evident; impartiality had to give to forced compliance, and show of force had to be aggressive and overwhelming.

Around D+60 and the completion of the 10 conditions earlier identified, the author feels that the requirement for IFOR shifted from compliance to monitoring and observing. The initial work done by IFOR in the first few months allowed the accomplishment of the doctrinal pre-requisites that define *"peacekeeping"* missions. Factional consent at the Corps and Division level, as well as in local communities, was gradually achieved through the JMC process and trust in IFOR's ability to gain and sustain peace. Interaction and focused attention at all levels of factional command and control by IFOR generated a reputation for **impartiality**. It was demonstrated in all areas of the compliance mission; sides were treated fairly and in an even-handed manner. Impartiality occurred whether involving a violation of weapons storage procedures or the application of IFOR assets and funding to assist in the opening of the ZOS and separation of forces. Finally, **show of force** was present but reduced, M1 and Bradley armored vehicles were gradually replaced by foot patrols, JMC's, work coordination meetings and reduced checkpoint and OP presence. The military provisions of the mandate had been achieved, now they needed to be maintained and observed.

By default, the PEO force which crossed the SAVA River in Dec 95 had now become the PKO force needed to insure sustainment of the PEO objectives. This transition was gradual, continuous, and done without change of phase or significant force structure re-alignment. Joint doctrine identifies three conditions that normally generate this change in mission. First, a U.S. unilateral operation or multinational operation transitions into a UN lead coalition (or vice versa). Secondly, the size and significant capability of the PEO force acts as a deterrent to opposition, causing a shift from combat to non-combat operations. Finally, a transition from military control occurs.[46] Elements of all three of these conditions contributed to the gradual shift. IFOR had assumed the mission from a weaker PKO UN force in DEC 95. The massive deterrence of a 20,000 man armored force in TFE acted to shift combat operations to non-combat operations. Finally, IFOR was beginning a long-term shift of many police, municipal, and security functions to civilian governmental control.

There are many situations and MOOTW scenarios where existing doctrine may be correct. The BOSNIA model, however, caused a shifting of missions from PEO to PKO along the spectrum of factional compliance that was not marked by a discrete and distinct demarcation of forces and missions.

This section has focused primarily on the transition and inter-relationships between PEO, PKO, and in the next chapter, *"peace building"*. While mentioned in the introduction, it is important to re-emphasize that a peace operation may transition in any direction, from increasing intensity to decreasing conflict. What can start out as simple diplomatic missions can turn to peaceful consent for *"peacekeeping"* forces then erupt into a requirement for full-spectrum *"peace enforcement"* operations. Conversely, scenarios may mirror the Bosnia model where *conflict* transitions to *"peacekeeping"*. Missions and challenges remain largely the same; it is the transitions that are significantly different.

JOINT DOCTRINE:

Many of the defining aspects of joint doctrine were introduced in the discussion above but amplification of some specific tasks is required. While JP 3-07 outlines the overall integration of *"peacekeeping"* into *"peace operations"* as one of the 14 MOOTW tasks, JP 3-07.3: Joint TTP for *"peace operations"* is the most complete doctrinal work. In addition to defining the relationship between PKO and PEO, it elaborates on PKO fundamentals, force structure implications, command and control implications, and associated supporting combat requirements needed to successfully complete PKO missions. Major ground force tasks include:

Observing, monitoring, and reporting
Maintain law and order, protecting civilians
Support to elections and crowd control
Manning of checkpoints and active patrolling
Demining operations
Negotiation and mediation
Assessment of facilities[47]

Table 3-1: MAJOR PKO GROUND TASKS

While providing an excellent framework and overview of *"peacekeeping"* operations, it does not get into any detail on specific engineer related functions or potentials. The only related issue is the supporting tasks to assist Foreign Humanitarian Assistance (FHA) operations which will be covered in the next chapter under *"peace building"* operations in support of diplomatic activities.

JOINT ENGINEER DOCTRINE:

An analysis of existing joint engineer doctrine in *"peacekeeping"* operations mirrors the earlier identified shortfalls on PEO operations. Joint Publication 4-04 was written before the revised joint PKO doctrine in JP 3-07.3 and offers no insight to roles and missions of joint PKO engineers.

Emerging joint doctrine stated in JP 3-34, Engineer Doctrine for Joint Operations, addresses engineer roles in MOOTW operations and is closely integrated to existing joint doctrine.

This manual addresses engineer capabilities and potentials for each of the MOOTW principles and provides insight in ways that engineer operations in MOOTW are often more focused than in high intensity conflict. It highlights the involvement of engineers to meet with other governmental, non-governmental and international organizations to establish work priorities, assist relief agencies, and focus engineer resources. Engineer actions including the repair of infrastructure, construction of wells and public facilities, and rudimentary transportation systems are highlighted as directly supporting the commander's overall mission. Expected resource equipment constraints, austere living and work conditions, and the scarcity of construction materials are cautions addressed to the MOOTW engineer.

While this draft publication scratches the surface of challenges and missions, the three pages of print addresses all 14 MOOTW scenarios and do not highlight the complexity and importance of the engineer mission. *"Peacekeeping"* is not discussed at all, and most of the dialogue involves corps-level and above construction engineers. There is no dialogue how the tactical engineer and his staff can be critical third party actors to design, resource, implement and execute infrastructure and demining campaigns. The potential to involve multi-national engineers with national and international NGO's and IO's is not addressed. A great opportunity to elaborate and incorporate the

types of engineer initiatives experienced in the Bosnia model is missed again.

ARMY DOCTRINE:

Current *"peacekeeping"* doctrine described in FM 100-23 adequately articulates the supporting army maneuver tasks needed to integrate with joint doctrine. It does not indicate any special capability of engineer forces to support and contribute to the accomplishment of the overall military and political endstate. Discussion focuses on engineer force tailoring and interoperability with multi-national forces; infrastructure assessment and repair, civilian countermine support or overall engineer leveraging potential is not addressed.

ENGINEER DOCTRINE:

The engineer capstone manual, FM 5-100: Engineer Operations, does not relate any specific engineer missions, capabilities or potential to dramatically contribute to the overall attainment of the *"peacekeeping"* objective. Discussions are limited to a generic explanation of doctrinal maneuver tasks and conditions. Engineer missions focus on general engineering tasks in support of lodgment and mobility for the deployed force.

FM 5-100-15, Corps Engineer Operations, while lacking in detail and scope, addresses two areas of engineer support conducted in *"peacekeeping"* operations. Combat engineer missions support the maneuver force's ability to maintain

freedom of maneuver and insure force protection. Highlighted tasks include clearance of mines and booby traps, removal of unexploded ordnance, clearing and marking of minefields, constructions of bunkers, checkpoints and OP's, and demolition of fortifications. General engineering tasks focus on the ability of the engineer unit to provide an adequate support base for the *"peacekeeping"* force. Included are the construction tasks outside the base camp perimeter of LOC construction and maintenance as well as airfield and port construction.

The deficiency in all existing publications, whether joint, army, or engineer-specific, is the failure to clearly identify and explain the potential engineer forces have to contribute to the higher-order mission. U.S. doctrine needs to expand on engineer's ability to leverage experience, technical ability, and negotiation skills to substantially add to the maneuver commander's vision and endstate. All engineers understand their doctrinal missions in support of the ground force - they are resourced, trained and highly proficient in both MOOTW and HIC environments. What they do not understand and need doctrinal elaboration on is their potential to assist the prospect of peace in a *"peacekeeping"* environment. *"Peace operations"*, and specifically *"peacekeeping"* and *"peace building"* deployments, place engineers in regions with austere infrastructure, complex countermobility challenges, and limited civilian capability and

resources. Bosnia highlighted the potential engineer units have to contribute to both the military and political endstates. It is now time to let existing doctrinal publications acknowledge and build on that significant capability and incorporate it into the training base and unit METL's.

SECTION 2 - APPLICATION OF THE BOSNIA MODEL TOWARD PKO:

As earlier mentioned, at the D+60 to D+90 mark IFOR forces were able to focus on sustaining *"peace enforcement"* systems. While challenging and time-consuming, these actions were limited in their ability to move the country toward rebuilding and re-unification tasks. War was prevented, and relative security was afforded all civilians, but conflicting political structures and factional tension prevented the emergence of peaceful co-existence. With elections approaching at the end of the summer and IFOR's mission scheduled to conclude by year's end, immediate actions were needed if the prospect of peace was to survive.

Determined IFOR commanders, staff and soldiers, supported by slowly deploying political and diplomatic external organizations, began to transition their focus from sustainment of enforcement operations to implementing *"peacekeeping"* reforms. The respect and legitimacy that IFOR officials had earned made them the only feasible organization in the region to

facilitate and negotiate the civil aspects of a lasting peace. IFOR military engineers served as a primary tools with which to inject economic revitalization, foster reconstruction of the damaged countryside, and generate political consensus.

SECTION 3 - ENGINEER COMMAND AND COORDINATION FUNCTIONS:

ENGINEER CONCEPT OF OPERATIONS:

At this point in Operation joint Endeavor, engineer activities had begun to stabilize, the support infrastructure was adequate to sustain daily operations, and the engineer command needed to focus on the development of a campaign plan. An overarching concept needed to be developed which outlined for the engineer staff and subordinate units a centralized vision of the engineer endstate with required implementing tasks. The challenge was to create a plan which supported the maneuver commander's intent to sustain *"peace enforcement"* actions, create a plan to address infrastructure shortfalls, continue to meet base camp upgrade desires, and support engineer tasks in the Brigade civil action plan. Following input from all staff and commanders, the engineer command group designed a *"peacekeeping"* campaign plan that remained an enduring engineer blueprint for successful attainment of the engineer endstate.

The campaign plan identified five pillars of supporting activities. Priority 1 focused on ZOS operations and compliance

of the military provisions of the Dayton Accord in PEO operations. Priority 2 shifted the focus on identifying and resolving critical infrastructure shortfalls which could be resourced and upgraded through the use of engineer leadership and funding initiatives. Priority 3 concentrated on the upgrade of the 15 base camps and eventually addressed the closure and reshaping of the brigade lodgment footprint. Priority 4 addressed individual, crew, and platoon training opportunities which needed to be sustained for high-intensity conflict and could be more realistically trained in Bosnia than Germany. Finally, Priority 5 missions focused on supporting Civil Action projects in support of political initiatives.

The engineer endstate for the yearlong deployment was identified as accomplishing the TFE Commanding General's intent, returning all soldiers home safely (no injuries) and careful stewardship of U.S. resources. Furthermore, his intent involved creating a career-defining experience for all soldiers in the battalion while do everything within the unit's power to create peace among the factions. This endstate, while built from the five pillars, was only possible on a solid foundation of sustainment. This foundation demanded the focused completion of the following fundamentals: quality services and maintenance, inventories, counseling, force protection, staff assistance

visits, teamwork, solider morale, accountability, and a true caring for the members of the battalion.

The designing of an overall campaign plan accomplished several agendas. Most importantly, it focused leader missions and solider tasks on the highest priority first - thereby giving general direction to weekly missions at subordinate levels. It defined mandatory and optional tasks. It put a boundary on mission creep - insuring that every frequent request for engineer assistance by a NGO, IO, local mayor or IFOR maneuver commander was tied to a higher level political or diplomatic objective. The campaign plan allowed decentralized operations - no daily orders were required to give subordinates specified tasks; they knew the priorities, understood the supporting missions, and could design, resource, and execute projects within that overall intent. Funding was provided for all aspects of the plan except large infrastructure repair and civil projects. This funding requirement is discussed in Chapter 4.

With essential combat engineer missions done during the PEO phase, the primary ability of the engineer force to be a combat multiplier in accomplishing the political endstate was realized through the completion of **Infrastructure Repair** (Priority 2) and **Engineer Civil Projects** (Priority 5). This monograph will briefly highlight the other three priorities to elaborate on types of missions, but the focus will mainly be on the two

priorities that really made the unit effective in contributing to the larger diplomatic objective.

ASSESSMENT OF INFRASTRUCTURE AND ENGINEER REQUIREMENTS:

The most important role performed by the Engineer Command and Staff cell is the identification of damaged facilities, the assessment of potential repair, funding alternatives and the inter-relationship of the required project to the larger geo-political and economic context of Bosnian peace and stability. At the D+60 timeframe, with *"peace enforcement"* operations stabilized and the engineer JMC operational, a great deal of external requirements came to the engineers for civil assistance. Individual requests came from local mayors, initial NGO deminers, other multinational engineers, and well-meaning maneuver brigade and battalion Civil Affairs and tactical commanders, all wanting limited engineer assets. Requests included removal of building rubble for the mayor of Brcko, mine clearance of cemeteries for cross-ZOS religious groups, and movement of a Serb Catholic church bell now located in Muslim controlled land. It quickly became apparent that without a engineer designed, brigade approved concept to focus engineer capabilities to achieve a regional endstate, the entire year would be spent on localized, bi-lateral faction support. This would do little to achieve any effort toward uniting the

factions into one interdependent country postured for long term peaceful co-existence.

Working within the general maneuver concept for the *"peacekeeping"* phase, engineers concentrated on orchestrating the infrastructure repair plan. The focus was on IFOR sanctioned projects either built or funded by IFOR. Projects were in support of the civilian sector, not IFOR or faction military use. NGO and IO assistance was welcome but at this time, they were not prepared to assume the lead in any functional sector. Bottom line - during *"peacekeeping" operations*, IFOR would take the lead on using limited IFOR engineer assets and funds to rebuild critical, politically important projects to carefully shape and set the conditions for the civil element to assume this mission when capable. (Chapter 4 will relate the transfer of this function to non-IFOR organizations after the D+180 timeframe with IFOR in support).

Engineer Priorities and Criteria:

The Engineer staff must design an operational set of reconstruction and humanitarian assistance projects that could create second and third order ramifications on strategic-level peace initiatives. In Bosnia, the engineer battalion staff categorized requirements into four priorities as described below:

PRIORITY 1: INTERNATIONAL PROJECTS - The completion of these projects support economic, resettlement, political, or diplomatic initiatives in Bosnia and adjacent countries.
PRIORITY 2: NATIONAL PROJECTS - These projects involve at least two factions and create favorable political, economic or diplomatic ramifications outside the Posavina Corridor region.
PRIORITY 3: REGIONAL PROJECTS (MULTIFACTIONAL) - Projects within the corridor but designed to generate relationships and agreements between factions as well as generating an economic or humanitarian improvement for both sides.
PRIORITY 4: REGIONAL PROJECTS (ONE FACTION ONLY) - Creating economic or humanitarian improvements for only one faction. Used by IFOR to balance an unequal distribution of aid by external agencies to the opposing side. No significant multi-factional interaction, limited political potential.

Table 3-2: OPERATIONAL ENGINEER ASSESSMENT PRIORITIES

All efforts focused on projects, programs, and initiatives that brought the factions together; working at the negotiation table to hammer out a governmental agreement, economic partnership, or political pact that created a dialogue and interdependence between the sides. Projects that only supported one faction seldom created any strategic potential to substantially bring the sides closer together. Engineer projects were one of the most successful vehicles that facilitated this dialogue. Funds were available, the proposed reconstruction project was usually rebuilding an existing structure (limiting factional disagreement) and the benefit of the reconstruction improved quality of life for all sides.

Within the established priorities, all requests had to be assessed against several variables concerning IFOR's limited ability to complete the project. The engineer staff designed the following criteria to evaluate each project's potential.

IMPACT ON FACTIONS: Did the project involve Bosnian Serbs and both sides of the Federation? Would substantial dialogue and partnering take place to force the factions to work together?

SCOPE OF REPAIR: What was the extent of damage, what ability was there to complete a partial or temporary repair.

ABILITY TO REPAIR WITH IFOR ASSETS: With limited IFOR funding and little NGO/IO involvement at this stage, projects had to be assessed if IFOR engineers could do the work.

COST OF REPAIR / FUNDING: What was the cost of repair? Did the project have IFOR or local Government matching funds?

ECONOMIC POTENTIAL: Did the project create jobs, revitalize the economic sector and allow factional business partnering?

HUMANITARIAN IMPACT: Did the project substantially prevent human suffering, improve quality of live, allow refugee resettlement, or provide essential food, water, shelter or medical care to alleviate suffering?

Table 3-3: IFOR PROJECT EVALUATION CRITERIA

The overall brigade plan analyzed all requirements in sector and using the criteria above, began to conduct assessments through the corridor to identify and categorize requests for assistance. Requests for requirements outside the engineer scope of infrastructure and countermine / demining were handled by the Brigade Civil Affairs team and eventually by a Brigade Joint Civil Commission (discussed in *"peace building"* - Chapter

4). Functional experts such as the IFOR chaplains, medical service, transportation and communication personnel were used in the evaluation process to take advantage of those technical and professional aspects which impacted each project.

Engineer Nomination and Assessment:

To properly address all aspects of the reconstruction effort, an architecture for nomination, assessment and evaluation had to be established and executed. As stated earlier, every inch of the brigade sector was owned and monitored by one of the three maneuver task forces with a supporting Direct Support engineer company. Each company commander was instructed on the priorities and criteria designed by the Engineer Battalion command group. Projects were nominated through a variety of methods. Routine meetings at the maneuver task force level between local mayors and civilian leaders identified many of the critical requirements. Some issues were raised in Task Force JMC's, Brigade JMC's and Engineer JMC's. Emerging relationships and trust between both maneuver and engineer leaders and local government officials identified projects of local importance. The assessment phase involved "on the ground" reconnaissance followed up by engineer estimates, civilian impact and political dialogue - frequently conducted at platoon leader and company commander level.

While eventual project approval would involve higher-level command decisions, many of the most successful projects completed during the deployment resulted from a platoon leader's initiative. Just as the battalion empowered the company commander to know, monitor, and improve conditions in their assigned TF sector, each company commander further delegated sub-sectors out to platoons. Each day, on the way to a work coordination meeting or mine clearance operation, platoon leaders would check road conditions, investigate civilian reconstruction efforts, inspect bridges or visit a local mayor. This decentralized execution, combined with a great deal of hard work and dedication on the part of the engineer soldiers, allowed the overall engineer commander's intent and campaign plan to be executed. These tactical leaders were daily creating the conditions and collecting the potential engineer projects that would eventually have operational and strategic impact.

SECTION 4 - SUPPORT TO POLITICAL PKO INITIATIVES:

Engineer missions focusing on Infrastructure repair, demining and civil action projects accounted for between 30% and 50% of engineer effort thorough the *"peacekeeping"* phase. Using the framework of engineer priorities explained earlier and some actual examples, this section will show the critical nature of

several engineer projects in serving as a peace multiplier to the overall IFOR peace stability mission.

PRIORITY 1 - INTERNATIONAL IMPACT:

Brcko Transportation Study:

Early in the deployment it was apparent to the Brigade Combat Team that the arbitration of Brcko and the peaceful co-existence of all three factions in one strategically located, economically critical city would serve as the brigade and possibly TFE's main effort. After initial analysis, the engineer command realized the untapped potential of the damaged transportation hub. A significant effort involving discussions on economic potential, reconnaissance of facilities, and international trade agreements resulted in the development of the "Brcko Transportation Study". Submitted to TFE and IFOR staff, this architecture proposed an option of infrastructure repair to augment civil political and diplomatic initiatives, possibly supporting the attainment of our strategic endstate.

The City of Brcko was a significant transportation hub before the war for road, rail and barge traffic. Brcko was the only city in northern Bosnia that combined adequate river barge depth, robust port facilities, road and rail bridge potential across the SAVA River, and a rail line linking the Tuzla valley to Croatian and Serbia. As a result of the war, Brcko was the central node from Bosnia-Herzegovina to Croatia and Serbia, as

well as a critical link between the Croatia and Muslim factions of the Federation and the Republic of Srpska.

During the war, all transportation nodes in Brcko were damaged and no repair had been initiated by the governments involved. The Brcko highway bridge was repaired with a temporary bridge in March 1996 (see section below) and was currently passing only IFOR traffic. Because the critical rail, road, and river facilities cross Bosnian interior boundaries as well as the international Croatian / Bosnian boundaries, government officials expressed concerns that issues involving civilian freedom of movement, taxes, customs, and international commerce were too difficult to resolve.

IFOR engineers from the RFCT proposed that if the Brcko transportation hub could be opened, even one mode at a time, the prospects of increased reconstruction would multiply significantly. In addition to increased commerce creating jobs and potential political stability, there would be many intangible benefits realized. If the Republic of Srpska could form agreements with Croatia and Serbia on river transport, the re-emergence of SAVA River barge traffic to Belgrade, the Danube, and central Europe was possible. If agreements between the Federation, Croatia, and Republic of Srpska were made on the former Yugoslavian rail network, a proliferation of north - south rail commerce from central Bosnia to central Europe was

possible. The economic, diplomatic and political ramifications of this re-energized transportation hub would be strategic, possibly stabilizing this politically sensitive flashpoint.

Brcko Road Bridge:

One of the most successful engineer projects to have strategic-level effects was the reconstruction of the Brcko highway bridge between Bosnia and Croatia. With all fixed bridges over the SAVA River damaged during the war, Bosnia's road link to northern countries and the historic trade routes to Europe were severed. The only bridge into Bosnia was the military Float Bridge that restricted flow to IFOR and limited NGO and IO relief convoys.

In May of 1992, the 1200-meter Brcko road bridge was catastrophically damaged with four spans destroyed. One span on the south shore close to the town of Brcko was blown by demolitions and cleanly dropped into the SAVA River, leaving a 40-meter gap. The northern end, suspended above mined flooded plains on the Croatian bank, had three destroyed spans over 67 meters in length and major damage to two supporting abutments.

Repair of the bridge had significant strategic impact for both military logistic operations as well as political reunification and economic revitalization. The existence of an all-weather, fixed bridge located on a high-speed route would reduce travel time for IFOR supplies and redeploying units, as

well as alleviate the need to maintain a permanent float bridge. From the political and economic perspective, reestablishing the land-link would "bridge the gap" in relations between citizens of Brcko and the Croatian town of Gunja. Civilian vehicles hauling commercial goods, currently using limited civilian barges could drastically increase the exports and imports entering the country, having a profound affect on the economy.

Most importantly was the potential impact on future arbitration efforts for the city of Brcko. Because the city was a strategic flashpoint unresolved at the Dayton Accords, the bridge could serve to open the possibilities of national travel. Additionally, the bridge could induce economic ramifications through the sector and foster an attitude of co-existence by Federation Croats and Muslims in Bosnian-Serb occupied Brcko.

The challenge with the reconstruction was three-fold. First, massive slabs in the northern spans of the destroyed bridge were preventing reconstruction efforts, their removal prohibited by dangerous mines beneath the bridge. Engineers of the 23rd Engineer Battalion and the Croatian Army conducted mine-clearing operations beneath the bridge then demolished the damaged spans using 305 pounds of plastic explosives. This was done with surgical precision severing the spans to the ground while insuring the existing abutments were not further damaged.

The second phase of the project involved IFOR engineers contracting with a U.S. civilian construction company to rebuild the damaged portions of the abutments. The final phase employed a combined multinational force of U.S. and Hungarian engineers who erected a 40-meter British "Bailey-type" military bridge on the south span and a 67-meter military bridge on the north span. Military traffic control points to monitor factional movement and compliance were established on each end and class 70 traffic crossed the restored structure starting 28 March 1996.

The Assistant Division Commander, BG James P. O'Neal, dedicated the bridge in an impressive ceremony linking NATO officials with governmental leaders from all three Bosnian factions and the country of Croatia. O'Neal commended the people of Brcko and Gunja for their support in opening this vital link between these warring nations and highlighted the potential the bridge created in establishing peace throughout the region. "We must also recognize the children who in years to come will benefit from our efforts for peace". O'Neal's remarks have already gained historical significance. Today the Brcko Bridge, designed, resourced and built by military engineers with contractor help, serves as the peaceful link between war-torn Bosnia and the rest of the world. Its completion has allowed millions of dollars of foreign material, relief agencies, and Bosnian commerce to cross the gap that

separated war from peace. These accomplishments were possible because military engineers, working at the doctrinal edge of the envelope, understood the changing dimensions of a *"peace enforcement"* mission to a *"peacekeeping"* opportunity to act as a multiplier achieving strategic political and economic results.

PRIORITY 2 - MULTI-FACTIONAL NATIONAL IMPACT:

Several potential projects were identified which involved two or three of the entities and had impact throughout the northern portion of Bosnia, reaching far outside the Brigade sector. These projects, primarily LOC and transportation oriented, focused on the repair of major road and rail lines which stretched south to Tuzla and West to Banja Luka. The projects established initial operating capability with IFOR provided funds and either IFOR engineer units or IFOR controlled contractors. These projects were eventually upgraded to permanent construction standards in the *"peace building"* phase under the control of external agencies (explained in Chapter 4).

Tuzla / Corridor Rail Line and Fuel Farm:

Integrated with the Brcko Transportation Study and the reestablishment of rail traffic between Bosnia, Croatia and central Region was the requirement to re-energize the rail line from the Bosnian-Serb sector in Brcko south to Tuzla. Concurrently, IFOR (HQ) level engineer actions were concentrating on reopening the East - west line from Zvornik to

Banja-Luka. The intersection of these two lines allowed major rail traffic to access all major regions.

The rebuilding of the Bosnian rail system was clearly above the level of expertise, staffing, and funding abilities of a divisional engineer battalion. A cell at Division level was energized to study options but inadequate staffing created significant obstacles. With the Brcko Transportation study already submitted to Division, the Assistant Division Commander took the lead in focusing the actions of the rail cell. Following several planning conferences in March and April, the engineer battalion commander worked closely with the division staff to break the project into definable, achievable subsections that could gradually achieve mission completion.

The rail line between Brcko and Tuzla ran through seven kilometers of the ZOS south of Brcko, where years of trenchlines, minefields, and demolitions had destroyed the line in several ways. Existing minefields limited a detailed reconnaissance of the line. Two 25 meters rail bridges had been damaged, 2000 meters of rail line and the expensive gravel ballast underneath had been removed. Over 45 detonations and artillery impacts were found on the tracks. This portion of the line was the hardest to return to full operational capability.

South of the ZOS, the line ran 25 miles to TUZLA where the line appeared undamaged but unused for four years. Through a

combined effort from Division to engineer battalion, a plan was conceived to bring IFOR fuel convoys enroute from Germany across the SAVA on the floating bridge and position them adjacent to the RFCT brigade and 23rd Engineer Battalion headquarters inside the Camp Kime security network. This location was only 1000 meters from the main rail line. A plan was generated to build a truck download site into a flexible bladder fuel farm, construct a flexible gravity-fed line to the rail line, and transport the fuel with Bosnia trains to the TFE log base in the Tuzla valley.

Without going into the technical details of this construction project, the bottom line was that IFOR was able to achieve a $650,000 savings by bringing over 70% of the division's fuel by rail. Transport was faster and more reliable due to the more weather resistant methods of rail over truck. More importantly, the money spent on IFOR fuel convoys was diverted to the Bosnian rail company who was able to reenergize the Tuzla valley rail yard and network. By May of 1996, only five months in country, trains were rolling through the Bosnian countryside inspiring the local populace in the rebirth of a major transportation capability of their economy.

The ability to get a train 25 miles north of Tuzla to the Kime fuel farm was significant. Additionally, the location only 7 miles from Brcko meant that the repair of the damage through the Serbian ZOS was one of the only obstacles to the rebirth of

rail traffic from Tuzla to Europe. IFOR military engineers conducted significant rail reconnaissance alone the main line to photograph, document and estimate total damage and needed construction. Using the engineer JMC, the repair of the corridor rail line to Tuzla became a major project for the duration of the battalion's mission. Factional work parties conducted mine clearance along the route and IFOR mine clearance missions on roads leading to major rail intersections were executed allowing safe access of IFOR recon vehicles.

This effort culminated in the submission of a repair plan to TFE and IFOR headquarters on actions and funding needed to repair and reenergize the line. With a high level of IFOR interest but lack of available funding at this point, Chapter 4 will discuss follow-on actions in this project by with external agencies. Through facilitating available international, national, and NGO and IO funding and assets, the actions of the military engineer ultimately resulted in this line obtaining external funding and becoming operational in the fall of 1997.

Resurface of Route Arizona:

Throughout the early months of the deployment, significant effort by divisional, corps and theater-level engineers was expended in the upgrade and maintenance of route Arizona, the main military and civilian Line of Communication route through northern Bosnia. Chapter 2 discussed many of the freedom of

movement actions initially taken but unprecedented volumes of traffic resulted in continued degradation and damage of the road surface. The trust and confidence of civilians to travel across the ZOS, to visit people and places they had not been in 4 years, exponentially increased traffic volume. The requirement of a high-speed route through the Posavina corridor had international ramifications to Croatia in the north and the rest of Bosnia in the south. Consequently, engineers prioritized the upgrade of this route as a Priority 2 regional project.

The absence of any major external relief agencies or infrastructure partners forced IFOR to consolidate repair methods. Under the supervision of the TFE engineer brigade, along with data and advice obtained from both theater-level recons and Corps of Engineer experts brought in from the Waterways Experiment Station (WES), a scope of work was developed and local contractors identified. IFOR funding was secured in excess of $1.5 million dollars to complete rebuilding portions of the road which had been damaged by trenches as well as total resurfacing of the road where it went through the Zone of Separation. IFOR funding provided for expedient "Cold Patch" material maintained in the corridor with the 23rd Engineer Battalion's corps construction platoon that routinely performed pothole repair missions throughout the year.

The Arizona road repair project was another example of the entire theater engineer family joining in a consolidated effort to complete a critical project. Failure to maintain this route to a high-speed capability would have significant second and third order effects on follow-on civil reconstruction and commerce by external civil agencies. The doctrinal lesson learned was that the project started with a technical assessment at the tactical level by engineers who were "doctrinally" suppose to be concentrating on separation of the belligerents. The result was an engineer team approach using strategic level funding, operational level contractual oversight, and tactical level assessment, impact and follow-on maintenance producing a synergistic effect with national political ramifications.

PRIORITY 3 - MULTI-FACTIONAL REGIONAL PROJECTS:

Numerous projects were identified which involved the Federation and the Bosnian Serb factions, and a few essential projects involved all three ethnic groups. While limited to the people and governments of the corridor, these actions had substantial impact on returning the civilian lifestyle to pre-war conditions while getting the factions to sit at the same table and agree on a solution and share in the benefit IFOR engineers generated. The primary focus was faction interaction and consensus; the project was just the vehicle to bring them to the table with an incentive for improved conditions.

Arizona Market:

The most successful Priority 3 project was the creation of the Arizona Market. Route Arizona was the main north-south highway serving as the primary IFOR LOC route during the entry into Bosnia. The route crosses into the southern Posavina ZOS, transitioning from Bosnia Serb control to Muslim control, where the critical IFOR checkpoint Alpha 2 was located. While mine clearing operations cleared the roads and a one-meter shoulder, engineer-constructed wire fences warning of mines prevented vehicles from parking or pulling off on the shoulders.

The checkpoint slowed traffic to allow soldiers to inspect vehicles. During *"peace enforcement"* operations in January and February, traffic was sporadic and congestion was not a problem. By spring, trust in IFOR's ability to secure the ZOS created a high volume of traffic. Civilians would arrive on Sunday's at the IEBL marker, park their cars, and stand on the side of the road to meet and dialogue with friends and family. Within sight of IFOR armored forces, civilians felt secure in being able to establish a friendly meeting place.

Wherever there are people, eventually comes business. Within a few weeks, a local civilian brought a small mobile camper to the site and began selling coffee and pastries to the growing crowds. Other vendors showed up and sold vegetables, cigarettes, and baked goods. The line of parked cars, almost

touching the wire fence, stretched for over one mile forcing restricted two way traffic to transition into dangerous three lane traffic. IFOR convoys and armored patrols could not pass through the checkpoint, now serving as a chokepoint, without closing the road creating traffic control measures at each exit.

One Sunday afternoon in May, the engineer Battalion Commander was coming south while the Maneuver Brigade Commander, COL Fontenot was trying to go north. The traffic jam was the worse yet and the two commanders met on foot in the middle to personally direct traffic around the site. After some verbal direction by the brigade commander, the engineer commander proposed mine-clearing operations in an adjacent field suspected of possessing minefields. The proposal postulated that the factions had demonstrated a demand to purchase and trade items, the proximity of the IFOR checkpoint guaranteed security and the absence of pre-war market places limited the transfer of regional goods from one faction to another. In an effort to boost local marketing and inspire economic prosperity, the development of a market would initiate local trade. More importantly, it would serve to get the three ethnic groups to meet, trade, and gain trust in their prior enemies.

Following a month of tactical level design, coordination and factional minefield documentation, the engineers of the 23rd Engineer Battalion gained approval for the creation of the

Arizona Market from the Brigade Commander and local government officials. The American project was based on a three part plan, first - engineers would clear and proof the areas for mines, then build a drainage systems and access roads, and finally construct an internal road network for the new market. When finished the engineers cleared over 60,000 square meters of minefield, constructed over 875 meters of road and constructed assess and drainage structures. After finalizing talks with the local mayor, an agreement was made where the civilian government would purchase gravel if IFOR could emplace it, all in return for allowing the civilian government to charge lot spaces to generate income for both site maintenance and the community.

After completion, the mayor organized a ceremony and thank-you dinner to reward the soldiers for their efforts. The American battalion commander made the following comments:

> Besides clearing the traffic congestion, two other significant accomplishments occurred: First, the project provided a local place for local vendors to share in commerce and increase the economic viability of the area. Second, because the market is in the ZOS, members of each faction are coming together, working together, sharing their goods together and as a result, enjoying peaceful commerce as well as social interaction through an economic market.[48]

A few weeks later, during a helicopter overflight to the sector, MG Nash, TFE commander, looked down to see over 500 vendors participating in the now daily interaction. Tractor-trailer trucks and wholesale transactions were occurring.

Afraid of a riot on the ground, he landed to investigate. His surprise and elation at the accomplishment of the market project was evident and was often used by him throughout the deployment as a measure of the type of success at the tactical level which can have strategic ramifications. COL Greg Fontenot also spoke to the soldiers about the success of the mission:

> The things you have done allows Serbian, Croatia, and Muslim people to meet in the ZOS and to buy and sell and interact in a normal, peaceful way. It is an important step toward reconciliation for these people. It's a statement you've made about the validity of a great European tradition - one of coming together in the marketplace, buying and selling, talking, getting to know one another and restoring old friendships, making new friends, and working together.[49]

It was early projects such as this, reinforced by both senior leaders and visible success on the ground, which convinced engineers that their construction tools could help forge the building of lasting peace.

Major Road Repair:

The initial work done by IFOR to break through the ZOS and insure freedom of movement only rebuilt most routes to rough terrain, 4-wheel drive standards. Throughout the year, many roads were upgraded with IFOR graders and gravel to allow civilian cars, trucks and buses to easily transport both workers and economic products throughout the sector.

MG NASH, TFE COMMANDER, specifically articulated civilian freedom of movement within his initial commander's intent:

> Civilian freedom of movement is not within IFOR's mandate, but the responsibility of the parties. IFOR, in conjunction with the international police, will facilitate civilian freedom of movement by dismantling illegal checkpoints and assisting repatriation efforts.[50]

One of best examples of the way engineers assisted this effort is an explanation of engineer work done on "Cody Crater" in the summer of 1995. Located on top of a SAVA River flood control berm, the road was a high-speed access route between the Croatian and Serbian forces. During the war, Croats placed 6 500-lb. sea mines on the road and remotely detonated them, resulting in a 200 meter long by 30-meter wide crater three to four meters deep. To prevent offensive action, the Croats placed AT and AP mines in the crater connected to numerous trip wires and booby-traps. Four years of vegetation, in addition to sporadic Serb mines placed against Croatian offensive action, made Cody Crater one of the most dangerous places in the ZOS.

During Engineer JMC's, both sides expressed concern over repair of the road as well as a willingness to assist in mine-clearance. The upcoming spring floods raised additional concern of flooding on the land side of the berm, as many of the non-metallic lightweight plastic mines floated and shifted during the high water. Unique flood control soil restrictions from the Croatian government were integrated into the equation. Initially, the plan was to complete mine-clearance work with

factional engineers, but the death of the senior factional engineer in the initial mine-clearance operations convinced even the factions to abandon operations. The configuration of the northern Croatian ZOS, adjacent to a connecting ODZAK pocket ZOS, required the use of the road to effectively resettle the Odzak Area of Transfer (AOT). The responsible IFOR engineer company commander, acting almost independently, devised an innovative plan combining local governments, factional engineers, civilian deminers, factional civilian construction assets, flood control agencies, and IFOR oversight and security to complete the project. Carefully facilitating the conflicting hidden agendas and funding requirements of all the players took over 4 months to resolve. By late summer, working with IFOR and soliciting the aid of U.S. governmental relief agencies, over $2 million dollars was secured for the permanent upgrade of this road to acceptable flood wall and highway construction standards.[51] While this road project was actually completed after the unit's year in Bosnia, the initial plans for construction, mine clearance and execution timelines were ultimately adopted and completed. This initial planning and coordination by the IFOR engineer commander provided the groundwork for the eventual project completion by the multi-factional and contractor forces. The endstate was renewed flow of refugees, economic goods, and freedom of movement from the

Croatian ORASJE ZOS to the new ODZAK ZOS, an event too hard for both sides to solve independently.

Cemetery Visits:

The deaths of many factional soldiers across the confrontation line, as well as changes in the line and resettlement of refugees in new areas, created conditions where cemeteries were on the opposite side of the ZOS than living family members. When *"peace enforcement"* operations allowed civilian freedom of movement, substantial groups desired to cross the ZOS inside the other faction's areas to conduct organized cemetery visits. This was quickly perceived as a direct threat to the controlling faction and escalated to the highest level of IFOR. On a few occasions, initial visits resulted in major incidents, buses rolled over, civilian casualties, and post-event retaliation. Permission was denied in the interest of force protection for the visitors. While mainly a maneuver commander concern, one of the variables involved was the presence of recent mines located in cemeteries to deter opposing faction visitors.

In a tense *"peacekeeping"* environment such as Bosnia, it takes a very small incident to ignite the rage and resentment of the factions - it was IFOR's job to diffuse any incident that would lead to escalation and conflict. To contribute to the solution in this case, IFOR engineers systemically identified

all cemeteries potentially affected. Through the Engineer JMC process, factional engineers from the controlling side were instructed to enter the cemetery with demining equipment and under IFOR supervision, remove and hand-proof the cemetery to insure the absence of any mine. These operations were successfully conducted. The scenario of a visiting SERB faction widow, stepping on a Croatian emplaced mine in a SERB cemetery now under Croatian control, would had generated ramifications at the national and strategic level. These are the types of unknown scenarios which the *"peacekeeping"* engineer needs to uncover during mission analysis, understand the political context he is working in, and resolve it using demonstrated procedures and engineer diplomacy at the tactical level.

PRIORITY 4 - SINGLE FACTION REGIONAL IMPACT:

The majority of requests for engineer support came from concerned IFOR commanders or local mayors who wanted individual projects done for the benefit of one faction. These were low priority missions normally disapproved or done as a "supporting" effort on an equipment-available basis. The primary exception to this criteria was when an imbalance existed by international, IO, and NGO contributions causing a perception of partiality and favoritism to be created.

About four months into deployment, in the middle of the *"peacekeeping"* phase, European NGO's and IO's arrived with a

very specific functional focus and pre-designated ethnic customer. For example, Norwegian People's Aid arrived to build roofs on Muslim houses, World Vision arrived to construct at least one well in every Croatian town, and Muslim affiliated organizations rebuilt schools throughout the Muslim residential sectors. Through daily meetings with the Brcko Serb Mayor and local government officials about the rail and road projects, a great deal of resentment toward IFOR began to build-up about lack of NGO funding. NGO and IO briefings at Task Force mayor meetings quickly gave the impression of partiality on the part of the international community sanctioned by IFOR. The impartially of IFOR and all external agencies was in question and a growing trend of financial imbalance by relief organizations was preventing peace reconciliation efforts.

In an effort to balance this phenomenon, IFOR engineers initiated several projects for the Bosnian Serbs to regain an equitable distribution of humanitarian support. While IFOR was focusing predominantly on a bi-lateral, one side effort, when taken at the higher level as seen from the local factional government's perspective, equity was regained and trust and confidence regenerated that impartiality was truly one of the principles of the IFOR deployment.

Route Pear Resurfacing Project:

The location of the primary infantry task force covering the Brcko sector was located in the ZOS just south of Brcko at Camp McGovern. The five-mile northern access road called Route Pear was a narrow two-lane road designed for class 20 traffic. In additional to crossing through one of the most destroyed portions of the ZOS north of McGovern, the road was traveled by 10 to 15 IFOR convoys, many of which included class 40 vehicles. After three months, the road surface was virtually non-existent with major water buildup due to poor drainage during the wet weeks and significant dust and potholes during the dry weeks.

While these conditions challenged IFOR convoys, they caused significant political stress between the local officials of Brcko and the Task Force leadership. Tensions caused a sense of "IFOR living on top of us" where the brigade had always prided itself as living among the Bosnians. Normal relationships with civil authorities remained strained. To further aggravate the problem, a large refugee return and shifting of Serbs from the Sarajevo area of transfer caused a major resettlement along the five miles section of road. Serbian funding allowed hundreds of homes to be re-roofed and at least one room to be enclosed. Tractor-trailer trucks full of construction materials could not traverse the route to worksites slowing resettlement efforts. One day during the most degraded conditions a booby-trap was

located alongside the IFOR patrol route - possibly signaling that civilian tensions were getting pushed to the limit.

The engineer battalion staff, acting on requests from the task force commander and the responsible engineer company commander, surveyed the route, developed a scope of work, and requested divisional level funding and the use of corps construction assets to perform repairs on the road. After major drainage and pothole earthwork, combined with over $60,000 in asphalt repair, the route was returned to acceptable standards. Relations with the people along the route and the civilian government of Brcko improved immediately. They understood that while IFOR damaged the road, they were going to repair it back to standard for the people of Bosnia.

The critical point is not the repair of the road - IFOR's tracked and HUMMV vehicles could have continued to use it for the duration of the mission. The point is that in an effort to achieve political concessions and create conditions for other external agencies, NGO's and IO's, the expenditure of time and effort to prove IFOR's intent to be an even-handed peacekeeper was a valuable investment. "*Peace enforcement*" might have allowed a more stringent use of force and will. "*Peacekeeping*", and the engineer efforts to multiply the potential of enduring peace, required the repair of this negative second-order effect to accomplish the primary mission of preserving peace.

Brcko Rubble Missions:

Years of bombings, inner city fighting, and lack of maintenance generated massive amounts of building rubble throughout Brcko. Numerous requests from the Mayor of Brcko were initially seen as one-sided and not falling inside the engineer project criteria of supporting multi-factional projects. The tension in this Bosnian "flash-point" quickly elevated to operational and strategic levels, affecting the conduct of mounted patrols, the use of the Brcko Bridge, and the passage of IFOR sustainment convoys through the SERB sector. In an effort to appease and regain the trust of the local mayor, IFOR engineers supported several projects recommended by the controlling maneuver Task Force.

Three projects will be briefly discussed to outline the types of missions which can be used to re-establish factional balance. Occupants in areas of renewed civilian resettlement were cleaning the shells of their destroyed homes in preparation of reconstruction; placing all bricks, furniture, vehicles, and trash on the street. This quickly created traffic congestion, sanitary concerns, and a general lack of confidence in the ability of the local populace to restore the area to a normal living environment. Throughout the months of May and June 1995, engineer platoons with front-loaders, HEMMT cargo trucks, and ACE earthmovers moved into the affected sections of the town.

All debris was cleaned up and disposed of, and the political gains achieved with limited engineer effort far exceeded the cost of IFOR's time and resources.

Another example involves the local Brcko Serbian cemetery. High causalities, transfer of "out of ZOS" burials, and the proximity of neighboring structures prevented additional burial capacity. Local government officials had purchased a large, three-floor structure that was destroyed beyond repair and abutted within 2 meters of existing gravesites. The local community did not have the equipment or money to remove the 40-foot brick shell of the building. IFOR engineers were able to place cables 25-30 feet through holes in the structure enabling the four walls to be pulled inward on top of the foundation, preventing debris from falling on adjacent gravesites. A crowd of local citizens, the religious clergy and the mayor of Brcko thanked the soldiers for a job well done. This was another example of engineer missions conducted in support of civil agendas that added to an understanding of support, legitimacy and even-handedness on the part of the *"peacekeeping"* force.

SECTION 5 - SUPPORT TO MILITARY "*PEACEKEEPING*" OPERATIONS:

As the main effort of peace operations shifted along the threat spectrum from *"peace enforcement"* to *"peacekeeping"*, so did many of the military engineer tasks shift in both their

primary focus and ability to support a greater *"peacekeeping"* endstate. Many of the essential tactical skills and techniques employed by the soldiers were similar. The overall focus of missions moved from supporting IFOR maneuver units and the military provisions of the GFAP to supporting civilian and NGO / IO return to a normal living environment. While the first two months focused on opening roads for IFOR patrols, PKO operations focused on opening roads for civilian travel. Military bridging missions shifted from emplacing tactical bridges to constructing local civilian bridges for refugee resettlement.

The previous section highlighted IFOR's role to conduct general engineer tasks, countermine and demining initiatives, and construction of facilities to set the conditions for emerging governmental, NGO's and IO's actions which were beginning planned. These actions had nothing to do, however, with completing the actions started under the *"peace enforcement"* stage and sustained during the *"peacekeeping"* mission. Military tasks that supported continued enforcement missions were categorized into three primary functions; maneuver freedom of movement, continued destruction of the Zone of Separation, and support to military survivability and basecamp upgrade. These missions were primarily focused on the contribution to the IFOR mission with any benefits to the political effort considered as a favorable supporting effort.

FREEDOM OF MOVEMENT:

The initial work completed in the early months to open the initial 20 routes came far short of opening the sector up for adequate patrolling and remote site access. Through the engineer JMC process, every single route, road, or farmer tractor lane that crossed through mined and fortified areas was identified, prioritized, and scheduled for a clearance mission with the necessary faction.

Most routes involved clearing obstacles and mines with one side during one mission then coming at the same location from the other side of the ZOS with the opposing faction - removing and destroying all mines on the way. The three panther robotic clearing vehicles were used daily, each requiring an extensive transportation and set-up requirement (rollers were carried separately in a HEMMT cargo carrier and assembled on site). Many of the routes ran parallel to the IEBL inside the ZOS, so rather than having to cross the ZOS perpendicularly, the clearing mission required several days on the same road clearing an entire road of emplaced mines.

Planning and execution of the missions became routine and deliberate. The Engineer JMC set the ZOS blocks and rough timelines, but the work coordination meetings at the bi-lateral level established link-up points, clearing team validation, and review of minefield records. On the day of the mission, the

IFOR leader (normally a 2LT platoon leader) would insure that all mines in the ground were cleared, the documentation filled out, and the mines destroyed. Company commanders would normally arrive mid-day to confirm compliance with established procedures and verify with the battalion command group (CDR or S3) on the status of the clearing and approval of robotic proofing.

This process was continually refined with every platoon leader having to exhibit proficiency in safe and efficient mine clearing efforts. The result was an impressive 45 routes opened through the sector during the deployment allowing both maneuver and civilian traffic safe and unimpeded travel through some of Bosnia's most dangerous mined areas.

DESTRUCTION OF THE ZONE OF SEPARATION:

While engineers conducted a great deal of work in destruction of the ZOS during PEO, work continued throughout the entire year-long deployment. Destruction of all bunkers was accomplished in early spring of 1996 with a total of over 2400 bunkers demolished. Operations continued as described in "*peace enforcement*" operations (Chapter 2) but innovative NCO's and junior officers were able to integrate new soldier demolition training with actual bunker destruction. Rather than using standard blocks of C-4, leaders devised methods of destroying bunkers with shaped charges, bangalore torpedoes, and cratering charges. This technique allowed proficiency on high-intensity

explosive techniques to be trained in a MOOTW environment; completing the bunker destruction mission at the same time.

Mine clearing missions continued continuously throughout 1996 with operations primarily focusing on one of the four identified priorities explained previously. While IFOR engineers were very successful in directing faction engineers to complete mine clearance for a greater infrastructure need, frequently factions diverted clearing to accomplish a specific task directed by their leadership. As long as the factions consistently went to the minefields and pulled out mines, IFOR had no problem with this redirection, even if IFOR or civilian reconstruction did not benefit. A prime example was a popular civilian access path that entered farmer's fields. Two civilian minestrikes by farm tractors resulted in three deaths and several civilian casualties. Faction engineers were approached by local city officials and engineer mine-clearing efforts were temporary refocused to insure safe access. During the entire year the battalion was in sector, 594 minefields were cleared, 2900 mines destroyed, and 45 routes through the ZOS opened.

SUPPORT MILITARY SURVIVABILITY/CAMPS:

While not directly contributing the attainment of the political endstate, a great deal of engineer effort was focused during "*peacekeeping*" operations" at the continued upgrade of all 17 basecamps, checkpoints, observations posts, and remote

sites. Worthy of an independent monograph on base camp planning, upgrade, and closure by divisional military engineers, this effort will briefly be highlighted to document the competing demands on the military engineers while the political "*peacekeeping*" initiatives mentioned above were being conducted.

The success achieved in separating the forces allowed a reshaping of the brigade footprint as "*peacekeeping*" operations stabilized. Initial task force units occupied 7 checkpoints and 8 observation posts, all requiring a basic level of temporary lodging, latrines, force protection structures, parking and vehicle access, and communication capability. The hard work in breaching the ZOS to increase freedom of maneuver paid off in allowing maneuver patrols increased access to remote portions of the ZOS. This increased mobile presence allowing a decreased forward lodgment footprint and a decline in the number of fixed checkpoints and observation posts. Combat engineers, frequently working with a corps engineer attachment, removed all evidence of IFOR occupation while concurrently insuring maximum reutilization of any force protection or construction materials.

While this decommissioning plan was being conducted, concurrently the engineer battalion staff was designing for the maneuver task forces and brigade commander a complete tear down plan of all existing 17 major camps. The IFOR mandate was that all maneuver units would be across the SAVA River by D+365 or 20

December 1996. Engineer forces would stay behind to complete decommissioning and cross by 20 January 1997. Planning for this extensive effort progressed well into mid-summer with detailed synchronization of troop withdrawal and camp teardown. During the period from completion of initial basecamp standards to mid-summer, minimal construction was done at camps because any additional work would require additional tear down.

SECTION 6 - SHIFT ENGINEER MAIN EFFORT TO "*PEACE BUILDING*":

The last several pages of this chapter have provided numerous examples of engineer work on infrastructures repair and civil affairs projects to contribute to an overall political endstate. It is important to remember that due to the lack of external agencies present in theater at this point, IFOR had to take the lead in creating the "*peacekeeping*" conditions that would lead to future "*peace building*" initiatives. It might be possible to suggest that IFOR accepted a degree of mission creep at this stage, shifting from strict enforcement of the military provisions of the Accord to establishing conditions for peaceful co-existence through civilian nation assistance.

The critical issue to point out is that while this role might not been in the brigade's doctrinal "*peacekeeping*" mission, there was no other facilitator present who had the structure, legitimacy, and factional understanding other than

IFOR. The U.S. State Department cell was still being established, UNHCR and other NGO's and IO's were arriving and trying to determine their scope, and civilian government was preparing for upcoming elections and trying to secure a foothold in a new national environment. If IFOR did not step up, begin to initiate systems and functional dialogue, and facilitate both local and national reconstruction - no one else would have. With the military provisions stabilized, the only way that the civil elements could begin to conduct diplomatic and political support missions was under the leadership and structure of IFOR.

Without any distinctive event or shift in threat and faction actions, at some time around the D+180 mark, the sector realized a growing density of external players. These organizations were specifically trained in nation-building tasks and possessed the international, national and private funding that was needed to complete the doctrinal engineer "*peace building*" tasks. Chapter 4 discusses the combined military and relief agency effort which resulted in the development of a Posavina Corridor vision and action plan and the integral part engineers played in the execution of that initiative. The chapter addresses the shift in proponency from military engineer to external agency which occurred toward the end of the IFOR mission and supporting actions engineers made to contribute to the overall "*peace building*" effort.

CHAPTER 4: PEACEBUILDING (SUPPORT-DIPLOMATIC EFFORTS)

To set the conditions for real peace, IFOR was needed to stimulate and synchronize the civilian effort. Initially we were the predominant player. Over time, as the civilian agencies arrived and grew robust, we continued to lead, but from behind.

COL GREGORY FONTENOT
Commander, Ready First Combat Team

EXECUTIVE SUMMARY: At IFOR's six-month mark, the conditions set by IFOR, combined with a reduced threat and presence of NGO's and IO's, allowed a transfer in leadership of the civil aspects of the Dayton Accords. This chapter explains how IFOR leaders determined that a common forum, direction and vision were needed by all external players to focus the combined efforts on attaining the endstate objective. A discussion of the Joint Civil Commission and the "Posavina Vision" describe the synergistic results achieved in all areas of civil implementation. Military engineers facilitated the demining and infrastructure committees to accomplish projects worth millions of dollars and involving multi-factions and international players. The Brcko Transportation Study and community upgrade projects over $1.7 million are used to describe how IO's and NGO's assumed the lead in the civil sector. IFOR's engineers stimulated and synchronized the initial effort but only through the civilian agencies assuming the lead and letting IFOR lead from behind were the conditions set for real peace.

SECTION 1 - INTRODUCTION AND DOCTRINAL OVERVIEW:

Common to most military doctrine is the recognition that peace is a product of the will of the parties to a conflict and the concurrent application of all the instruments of national and international power - military, diplomatic, economic and informational. Our current National Security Strategy defines the military instrument of power as the pre-dominant force to stop war, enforce peace, and prevent belligerents and warring factions from causing internal conflict.

Framers of the Dayton Accord, combined with the UN Security Council and NATO leadership, have long understood that while the military instrument can prevent war and stabilize the region in Bosnia, it cannot force peace. Military interventions have a much higher chance of succeeding when they are linked to a political settlement. Military action without a clear political context is of little use: Pressure requires diplomacy to have an impact, just as diplomacy needs an element of pressure to be effective.[52]

This monograph has explained both the doctrinal and historical significance of engineers in the roles of "*peace enforcer*" and "*peacekeeper*". It is now important to discuss the doctrinal roles and missions of the engineer in "*support of the diplomatic*" efforts of the national strategy. Conditions in Bosnia were set to allow a transition to "*Support to Diplomatic*

efforts" (in the case of engineer missions - *"peace building"*), to become the focus around the D+181 date. This chapter will explain the transition of the main effort from *"peacekeeping"* to *"peace building"* by transitioning the infrastructure and demining programs to national and international non-governmental, NGO, IO, and Bosnian civil government institutions. *"Peacekeeping"* missions continued as a supporting effort and while still conducted, *"peace enforcement"* missions were done as a sustaining effort.

It is important to restate the types of engineer operations initially identified in the "Continuous Spectrum of Engineer Operations" located in the introduction to the monograph (Figure 1-2). In many peace operations, it is possible and highly likely that all three missions will be ongoing concurrently, but that the overall intensity and focus of the main effort shifts. While this chapter discusses the emerging role in *"peace building"* of strengthening and rebuilding infrastructure, training of defense forces, or repairing civilian facilities, it is being conducted because of success in earlier operations. The conditions have been set which allow the diversion of C2 and engineer forces to participate in diplomatic support initiatives. To properly influence the peace endstate and become a peace multiplier, the engineer must continue to best apply the use of his engineer forces and potential. This

phenomenon may not as prevalent in maneuver and direct-combat units.

JOINT DOCTRINE:

Current joint doctrine defines "*Peace Operations*" as military operations to support diplomatic efforts to reach a long-term political settlement.[53] The MOOTW publication further breaks "*peace operations*" into the two distinct categories of "*peace enforcement*" and "*peacekeeping*", both involving various activities necessary to secure a negotiated truce and resolve the conflict. As earlier mentioned, these operations can be conducted along the spectrum of peace to conflict or conversely, coming after war transitioning to peace. Both are tailored to the individual characteristics of the situation and may be conducted in "*support of diplomatic activities*".

This description of "*Support to Diplomatic Operations*" does not align neatly with the 16 categories of MOOTW operations. It is not high intensity conflict nor is it covered in any of the other 15 categories of MOOTW. Extensive discussion is included only in "peace operation" joint publications. It appears that while the framers of our doctrine wanted to outline specified tasks in "*Support to Diplomatic Operations*"; they were determined to not identify it as a discrete PO mission. This study proposes that "*Support to Diplomatic Operations*" is a strategic application of the diplomatic, political and

informational instruments of power forming a context or set of conditions that PEO and PKO are performed within. There are current joint applications of this mission which apply to the joint engineer and merit evaluation and discussion.

There are three operations that "*Support Diplomatic Operations*". "*Preventive Diplomacy*" consists of diplomatic actions taken in advance of a predictable crisis to prevent or limit violence.[54] Successful conduct of this operation could result in military PKO to monitor multi-lateral agreements. "*Peacemaking*" is the second operation and is the process of diplomacy, mediation, negotiation, or other form of peaceful settlement that arranges an end to a dispute and resolves the issues that led to the conflict.[55] One could make the point that it was "*peacemaking*" at the strategic level that brought international consensus and commitment by the three factional governments in the Dayton Accords. Many times this operation also involves a PEO or PKO force similar to IFOR. Both of these operations permit the U.S. government to exercise the diplomatic arm at the strategic level but do not involve any substantial expectation of engineer effort prior to the deployment of the "*peacekeeping*" force. Therefore, there is no merit of further consideration.

"*Peace building*", however, involves a great degree of engineer involvement and is the focus of this section. "*Peace*

building" consists of post-conflict actions, predominately diplomatic, economic and security related, that strengthen and rebuild governmental infrastructure and institutions in order to avoid a relapse back into conflict. Specified military tasks include nation assistance, PKO, or other activities conductive to continuing the post-conflict political process.[56] In Bosnia, keeping within the doctrinal sphere, these missions included demobilizing the factions, the set-up and security of elections, weapon confinement and accountability, and assisting in national reconciliation. It is normally expected that the diplomatic efforts in post-conflict, especially failed states, will take a more sizable force of greater duration. If government institutions are absent, the PKO force may have to initially assume the control and execution of several governmental functions.

Incorporated within the above description of *"peace building"* was the specified task of "Nation Assistance" - one of the sixteen types of Military Operations Other Than War (MOOTW). This highlights the possibility and usually the likelihood that any one MOOTW operation may contain components or portions of other type. One of the three programs under the "Nation Assistance" umbrella is "Humanitarian and Civic Assistance". Joint doctrine limits engineer participation in this program to US Code Section 401 requiring this assistance to be in

conjunction with military exercises which fulfill unit training requirements. At this point, we get into a joint doctrine "do-loop" which is not critical to engineer actions on the ground. For simplicity and benefit to the "multiplier" argument, we will postulate an explanation. During PKO and PEO, engineers will be expected to perform task which strengthen and rebuild the infrastructure, incidentally creating "humanitarian" benefit to the local populace, which "*support diplomatic efforts*" to establish peace and order. To analyze these roles and missions, without being immersed in doctrinal semantics, the study will entitle these "*peace building*" efforts in "*Support of Diplomatic Efforts*" under a "*Peace Operations*" MOOTW deployment.

ARMY DOCTRINE:

Published Army doctrine written in FM 100-23 (1994) does not recognize the 16 categories of MOOTW and the delineation of "*Peace Operations*" into two types of operations, PEO and PKO. Conversely, it recognizes three types - the third being "*Support to Diplomacy*" comprised of the familiar "preventive diplomacy", "peacemaking" and, "*peace building*" as delineated earlier. In addition to the joint definition, "*peace building*" includes mechanisms that advance a sense of confidence and well being, support economic reconstruction, and involve civilian leadership. "*Peace building*" includes restoring civil

authority, rebuilding physical infrastructures, and reestablishing commerce, schools, and medical facilities.[57]

Army doctrine describes "*peace building*" high in public consent, low in the required use of military force, and requiring a high degree of impartiality on the peace operation spectrum. There is little specific mention on any engineer-related issues other than general nation assistance and infrastructure repair.

ENGINEER DOCTRINE:

Consistent with the analysis of engineer doctrine in PEO and PKO, current doctrine on engineer involvement in "*peace building*" does not accurately represent the types of roles and missions one could realistically expect.

The draft "Engineer doctrine for Joint Operations" briefly discusses post-hostility actions needed to support a more rapid transition to civilian control but primarily discusses support to U.S. forces in preparation of battle damage repair or construction of redeployment facilities. For political and good will reasons, engineers may be tasked to repair facilities and infrastructure which may be used by the host nation government to provide a means of livelihood for the general population.[58] While the document cautions about funding and mission creep, the doctrine focuses on specified tasks at the tactical level. Missing is any meaningful dialogue on the role of the engineer

as an integral player in the design and execution of an integrated civil reconstruction effort. The capabilities and challenges of national inter-agencies, NGO's, IO's, and international organizations is completely missing in current joint doctrine. A useful appendix outlines the capabilities of each unit but is of minimal use if the expected doctrinal role is not properly identified for resourcing.

Joint doctrine for complete civil engineer support in support of military forces for high intensity operations is adequately outlined in Joint Publication JP 4-0 but it does not address MOOTW. The manual provides an excellent discussion on tasks, systems and programs that need to be executed in support of lodgment, sustainment, and military mobility requirements. Like JP 3-34, JP 4-0 neglects any discussion of engineer efforts made in support of achieving political and economic progress in the overall national mission objective. The Civil Engineer Support Plan (CESP) provides adequate structure to provide the military engineer requirements but falls short of incorporating international and humanitarian agency participation into an integrated, *"peace building"* initiative.

Army Engineer doctrine regarding *"peace enforcement"* or *"peacekeeping"* does not recognize the joint responsibilities to "support diplomatic efforts". Understanding the similarities in mission between *"peace building"* and "nation assistance", one

can use the outdated references to incorporate doctrinal support roles.

FM 5-100 (Engineer Operations) and FM 5-100-15 (Corps Engineer Operations) both describe the engineer goals in nation assistance. Highlighting the tie back to training, both documents outline the support engineer forces can provide to promote development, restore infrastructure, and shape an environment for orderly political change and economic progression. The focus of these projects, however, is partnering and military to military interaction with the host nation's engineers. The target objective is the transfer of essential skills to the host nation construction engineer, a capability which none of the factions possessed. No where in nation assistance doctrine is there an explanation of the potential that engineer forces possess to integrate the external assets (NGO's, IO's) toward an overall *"peace-building"* endstate.

If the aggressive engineer doctrinaire continues to search through humanitarian assistance procedures and the federal foreign assistance act, pieces of the engineer puzzle can be found and slowly pieced together. Using agreements between the parties in the conflict and host nations, a framework of Title 10, United States Code 401, State Department and congressional funding procedures; an overall understanding of general

engineering support can be developed and pursued. It is not the point here to be imbedded in doctrinal red tape.

As a summary to the entire joint engineer doctrinal foundation of "*peace operations*", the engineer family needs to significantly improve its' doctrinal roles and missions. Bosnia is just one of several recent deployments displaying engineers potential to assist in achieving the political endstate. Our doctrine needs to outline the "*peace building*" roles and potentials of the military engineer to integrate an overall reconstruction plan and facilitate the transfer of that plan to non-governmental follow-on capabilities. The military engineer possesses a unique ability to understand the situation, the factions, and the inter-connectivity of the political and economic objectives. He possesses the experience and skills to assess the shortfalls, formulate and prioritize requirements, and apply limited funding and engineer assets to achieve successful mission completion. When adequate external assets are capable of performing the mandated elements of a "*peace building*" plan, that engineer must lead from the rear by transferring those responsibilities to follow-on civil elements.

Doctrine does not predict the future but sets in motion that which will produce conditions for success.[59] If engineer doctrine does not highlight the potential to serve as a peace multiplier, then engineers will constantly be locked in a state

of support to maneuver forces. While this is truly the engineers' number one mission, once maneuver support has stabilized, they need to be aware of their potential to affect a higher order mission. Sir Liddell Hart's dictum - that the challenge is not to put a new idea into the military mind but to put the old one out - clearly applies.[60] Doctrine is the engine that drives change with our Army. Doctrine embodies our ideas, and ideas drive change. The changing evolution of our military conflicts to more peace operation roles, combined with the proven capability engineers have to synthesize ideas and forces, mandates a shift in doctrinal expectations. Engineers have performed this mission for years, now they need to document, train and resource their forces with the doctrinal tools needed to maximize that demonstrated potential.

SECTION 2 - *"PEACE BUILDING"* IN THE BOSNIAN MODEL:

OVERVIEW OF OPERATIONS:

Around the end of May 1996, a great deal of effort was expended from Division / Task Force Eagle level down through Brigades and Battalions on analyzing our performance to date. More importantly, units had to define the proposed endstate created by year's end and what intent (purpose and method) would achieve that endstate. Senior leaders generally agreed that IFOR's presence had achieved a great deal. Forced compliance by

IFOR to the Dayton Accord had led to increased freedom of movement, the separation of the factions, and the continuation of the cease fire since December. This stable and secure environment would create an environment that would allow civil implementation to begin. The leaders of the operation saw a new phase emerge exploiting our potential to focus international efforts and assist this civilian implementation.

The soldiers and units needed to continue *"peacekeeping"* operations with effective force-protection measures and adequate sustainment operations to be successful. MG Nash's revised intent was published at the 6-month mark and while retaining focus on the military aspects, redirected available effort to the more complex challenge of *"peace building"*. TFE's intent was for soldiers and leaders to:

> Continue to operate closely with civilian agencies as they work to fulfill their responsibilities in the peace process. The civil political and economic reconstruction programs are critically important to long-term peace and stability. While the military can provide a great deal of assistance, this is a joint civil / military operation for peace. We will assist civilian agencies within our capabilities as they carry out their tasks and when it will not be detrimental to our primary military mission.[61]

The main method IFOR would interface with the civil elements was through Joint Military Commissions, bi-lateral meetings and civil-military operations at all levels. Key to that intent was the continuance of formal and informal contacts

with the former warring factions. Those military contacts, as well as Joint Civil Commission (JCC) initiatives in coordination with the Office of the High Representative and UN/NGO/IO agencies, would set the conditions for our long term success. The implied task for the conduct of all operations was to facilitate non-military efforts toward infrastructure development, economic growth, and democratic practices. The bottom line was that while IFOR would assist "*other*" agencies with "*their*" responsibilities, it had to do so without interfering with the "*peacekeeping*" and force protection programs that had made the operation a success to date. The civilian tasks associated with the peace agreement could only be done by external agencies if IFOR maintained a stable and secure environment.

SUPPORTING ORGANIZATIONS:

A vast array of external agencies ranged the spectrum from local government agencies, U.S. governmental agencies, UN supporting agencies, regional powers, and humanitarian organizations. These agencies were either present in Bosnia when IFOR arrived or began arriving after initial entry operations were underway. This section will address three predominant categories of agencies to assist in the understanding of their charter and the unique support and integration challenges that developed. While the military

instrument of our national power can prevent war, many times it is through the involvement and success of these organizations that a nation can truly achieve peace.

Governmental Organizations:

The first category of civil support is direct governmental agencies from either the U.S. government, the United Nations, or NATO. Joint doctrine emphasizes the importance in peace operations that all military activities are closely integrated at strategic, operational and tactical levels with these agencies. This integration optimizes the effectiveness of the total effort and prevents military actions that may be counterproductive to achieving the endstate.[62] After initial frustration, IFOR units eventually discovered who these agencies were, understood their mission and funding, and attempted to integrate them into actions as low as the Battalion Task Force level.

By this phase, TFE had identified several ways to assist governmental organizations and routine dialogues were established throughout the sector. Bi-monthly JCC meetings were facilitated at Task Force and Brigade level which incorporated elements of all three types of organizations. The most critical U.S. player was the U.S. Department of State (**DOS**) but staffing did not allow anything above a political officer (**POLAD**) from appearing in the brigade area. Most interactions with DOS were

through the U.S. Agency for International Development (**USAID**) representative from Tuzla. USAID was very involved in the infrastructure development portion of the challenge but did not represent the other vital interests that the U.S. State Department monitored in Bosnia.

The majority of other representatives were from the United Nations or European governmental organizations with a specific mandate of verifying a portion of the Dayton Accord or providing humanitarian assistance oversight. The Office of the High Representative (**OHR**) developed civil, political, economic, and infrastructure reconstruction efforts and leveraged almost one hundred governmental / NGO / IO organizations to participate in an integrated concept. IFOR units provided support teams to assist the Provisional Election Commission (**PEC**) and the Organization for Security and Cooperation in Europe (**OSCE**) in organizing and conducting international elections. IFOR provided the International Police Task Force (**IPTF**) training, intelligence, liaison and quick reaction reserves in case of major conflicts. Security, communications, transport, and lodging were provided to the European Community Monitoring Mission (**ECMM**), United Nations Military Observer (**UNMO**) teams, and the UN Development Program (**UNDP**). Other UN humanitarian organizations receiving support included the UN Civil Affairs organization (**UNCA**), United Nations Children's Emergency Fund

(**UNICEF**) and the UN Educational Scientific and Cultural Organization (**UNESCO**).

IFOR's provision of security and demining in resettlement areas, continued efforts in disbanding illegal checkpoints, and improving freedom of movement all supported the UN High Commissioner for Refugee's (**UNHCR**) efforts in settling refugees and displaced Bosnians. Significant efforts by Task Force maneuver forces in locating, guarding, and protecting sites of suspected war crimes contributed to the success of the International Criminal Tribunal for the Former Yugoslavia (**ICTY**). To augment and sustain the international and U.S. agencies, more than 450 TFE Civil Affairs personnel were integrated into the overall civil "*peace building*" plan along with supporting efforts provided by all deployed brigades and battalions.

Non-Governmental(NGO)/International(IO) Organizations:

A myriad of other international agencies arrived to relieve adverse humanitarian conditions. Large international organizations included the World Health Organization (**WHO**), the International Commission of Red Cross (**ICRC**), the International Federation of Red Cross and Red Crescent (**IFRC**), and the European Community Health Organization (**ECHO**). Smaller groups included the European Community Task Force (**ECTF**), Caritas, Merhamet, the Overseas Development Organization (**ODA**), Doctors

without Borders, World Vision, **CARE**, World Food Program, Norwegian Peoples Aid (**NPA**), United Methodist Committee (**UMCOR**), Swedish Red Cross, and **CISP/INTERSOS**.

Infrastructure efforts supplementing USAID initiatives were coordinated and funded by the International Management Group (**IMG**) and the World Bank. All three of these organizations worked closely with the engineer forces and are explained in more detail in the next section.

EXTERNAL AGENCY INTEGRATION:

The rapid deployment and initial six month focus of IFOR on *"peace enforcement"* and *"peacekeeping"* limited leaders and forces to fully understand the complexities in integrating these players into the overall *"peace building"* challenge. Most of IFOR had no experience with any of the missions, funding or procedures for these diverse groups. Units and commanders should have known who the participants were, the intent and methods that they would employ, and the assets available to carry out their mandate. A common understanding of their mission, combined with briefings and a sharing of IFOR intelligence, could have fostered a spirit of corporation and mutuality of interest.[63]

Our joint publications identify many of the characteristics of these agencies and explained how they can also be a critical peace multiplier when effectively integrated into the military

mission. Their familiarity with the culture, language, and sensitivities of a populace is a valuable tool that assists the commander accomplish his mission. NGO's and IO's purpose is to address humanitarian requirements, and their primary source of security is their neutrality.[64] The recons and non-military discussions NGO's and IO's conduct can be an important source of situational updates and information to the deployed commander. Caution must be taken to prevent any perception by the factions of the collection of human intelligence (HUMINT) by these agencies.

This lack of a doctrinal understanding led to frustration and a degree of tension between IFOR and the external agencies. Initially, IFOR military leaders and planners found it difficult to work with the more loosely organizations NGO's and IO's. Leaders at the tactical and operational level did not understand the significance of political and economical factors on the agencies operation. Many times their projects involved a significant public media campaign that ultimately supported additional host nation public support and fund raising initiatives. In an operation where one of the three MOOTW principles was impartiality, many of the organizations were just the opposite, directing all their assistance to one religious or ethnically oriented concentration of Bosnians.

Conversely, this tension also developed on the NGO and IO side. Many times the organizations resented the military and its disciplined approach to the *"peace building"* operation, as well as their concern for physical security and the restrictions this imposed on the agencies. Several times during the year, pending a critical election rally or Brcko arbitration announcement, military leaders restricted the activities of these organizations in areas where IFOR expected civil unrest. While IFOR was not directly accountable for the force protection of these NGO's and IO's, it was IFOR forces that would have to rescue them from trouble. IFOR would have to extract them out of a hostile crowd, recover their vehicles from a mine infested back road, or diffuse a political conflict caused by unequitable allocation of assistance.

Eventually the professionalism and abilities of both IFOR and the agencies changed as all realized each other part in contributing to the same overall mission. Lesson learned in Chapter 5 will highlight some preventive measures to assist this interaction, but suffice to say many of the initial challenges and tensions could have been eased by leadership and training initiatives.

IFOR INVOLVEMENT IN SHAPING ENDSTATE:

The integration and partnering challenges raised to a level that battalion and brigade commanders were concerned about the

focusing of all available assets toward a common vision and endstate. By mid-summer NGO's and IO's were abundant. They were fighting for participation in major projects which would give them high-payoff recognition and civilian impact while missing the true requirements identified by commanders who understood the dynamics of the problem. Equity and balance continued to come up from Bosnian Serbs at every JMC and JCC - they could not understand why the Federation (and Muslims specifically) were reaping the majority of international funding while Bosnian Serb's fell short.

External funding and project selection not only improved a given function or facility; NGO and IO projects generated requisitions for construction and relief supplies, created jobs in the civilian market, and boosted the defunct economy with hard currency. At TFE level and below, unit civil affairs cells would total the amount of assistance projects on both sides of the ZOS to calculate the distribution of funding throughout the sector.

While major plans and initiatives existed on paper at IFOR headquarters in Sarajevo, four-wheel drive vehicles with European plates and unfamiliar people arrived in the brigade sector daily looking for projects that fit their organization's charter. Initial recons by engineer and maneuver commanders, combined with proposed projects from local officials, were

identified early in the operation on the brigade civil affairs master project lists. External agencies would query and survey these requirements but settle on some small project that allowed them get their feet wet. Consequently, the selected projects had no major impact on the overall stability and integrated plan to energize the rebuilding of the Posavina Corridor.

THE POSAVINA VISION:

COL Greg Fontenot, Commander of the brigade combat team, determined that a common forum, direction and vision was needed by all external players to focus the combined efforts on attaining the "transition to peace" endstate objective. He determined that if IFOR, U.S., UN and NATO governmental agencies, non-governmental and private voluntary organizations, along with the European monitoring agencies could develop and agree on common ground, the synergistic efforts would be remarkable. Fontenot's concept involved bringing together representatives from all the agencies in or responsible for the region (highlighted earlier) into a "Posavina Working Group". Member totaled over 35 unique divergent agencies all with differing national, international, and private mandates and agendas.

The overwhelming authority, respect, compliance, and success the IFOR brigade had achieved in the first 6 months would required the brigade play a leadership role in the early stages

of the Posavina Working Group. To set the conditions for long-term peace, IFOR would have to continue that necessary and central role in stimulating and facilitating the civilian effort. Fontenot believed that over time, as the civilian agencies understood the mission, factions, conditions, and supporting organizations in the corridor, they would lead the rebuilding effort with the military reverting to a supporting role. At this point, the military would assist the work of the governmental, non-governmental and private organizations serving as catalysts and synchronizers of operations. In light of the pending downsizing of the military contingent, this was the right move and a shift that needs to take place in all peace operation missions that go from war to peace.

The Posavina Working Group was formed after the D+180 mark in June of 1996 as initially conceived. The group developed a "Vision for the Posavina" unanimously adopted by all players.

Continued progress toward full implementation of the Dayton Peace Agreement, including full compliance with the Military Annex of the treaty and impartial support for reconstruction of the infrastructure and integrated economic redevelopment underway. Right of return respected by all parties. Economic and social integration of Brcko arbitration results. The Posavina Corridor used as a model for the rest of the country and a tool for joining entities with each other and neighboring countries IAW the standards of Western Europe.[65]

Table 4-3: VISION OF THE POSAVINA CORRIDOR

Over the course of the next month, the working group reviewed IFOR's priority lists of major concerns identified through recons, meeting with public officials, and multi-factional meetings, and segregated all issues into three major committees. The major issues covered by each committee were "Compliance", "Infrastructure" and "Reconciliation". Representatives from external agencies joined the committee that best fit their organizations mandate but could be on more than one committee if needed. IFOR battalion commanders and civil affairs officers served as both regional experts and functional committee members to clarify issues and develop possible solutions. In an effort to gain civilian leadership consensus and reduce the military involvement, committee leaders and important functional proponents were solicited from the external agencies, not IFOR. Each committee developed a set of objectives that if successfully accomplished, would achieve the Posavina Vision. This vision would eventually lead to the attainment of the NATO mandate and the U.S. national (NSS) and military (NMS) strategic endstate.

The **COMPLIANCE** committee focused on the conduct of elections, police activities with the IPTF, safe right of return by refugees, freedom of movement, and UNHCR involvement in cross IEBL relationships and visits. The **RECONCILIATION** committee developed an action plan for the housing of all displaced

civilians, the return of remains and personal documents, the accountability of POW's and MIA's, a Joint Religious council, and the respect by all factions of human rights. The participation in these committees by the engineer battalion staff primary focused on demining support to resettlement areas and freedom of movement routes. Specific missions included mine clearance support to cemeteries, mass gravesites, and church renovation project sites.

The involvement of the tactical brigade engineer in the **INFRASTRUCTURE** committee served to demonstrate the potential of the military engineer to serve as a critical peace multiplier to achieve the peace operation endstate. The next section will outline actions taken in the Bosnia model and demonstrate through actual examples the ability of the engineer leadership to stimulate, synchronize and facilitate the civilian "*peace building*" effort.

SECTION 3 - ENGINEER COMMAND AND COORDINATION FUNCTIONS:

The primary focus of the infrastructure committee was to identify, assess, prioritize and solicit adoption of significant infrastructure projects. While all requirements were reviewed, projects which had the potential to restart the fledgling economy, improve freedom of movement, and bring together the various sides of the conflict in project integration and

cooperation were considered high-payoff projects. The committee agreed on a common set of goals and objectives to focus the groups' collective efforts.

Using much of the information and criteria previously developed by the engineer battalion (Priorities 1-4 in Chapter 3); several focus areas were agreed upon based on regional economic impact, cost, faction affected, and political and diplomatic achievements. First on the list was the restoration of reliable electric and water delivery in all major population centers. Any joint economic venture underway or proposed by the factions, including the availability of accessible markets, was a priority focus. Construction of adequate high volume, high-speed roads and bridges with associated custom points was one of the priority criteria. Efforts to restore telecommunications and mail through construction and governmental policy intervention were included. Finally, the reconstruction of the rail, road and port facilities to restore national and international commerce and transport on the highway, river and railroad networks completed the focus subjects that the group proposed.

IFOR engineers facilitated the sponsorship of these projects through a series of meetings with the entire Posavina Working Group, the Infrastructure subcommittee, and individual meetings with specific organizations and agencies. The goal was to make

the projects align with the internal organizational goals of the donor agencies to solicit both funding and contractor support. Some NGO's would work in only one side of the ZOS; so more efforts had to be applied to other IO's to assume projects on the other side. Some organizations had similar agendas - several IO's were focused on the repair of local water supply systems but no one wanted to focus on the associated local sewer system. Many organizations were only interested in projects that would appeal to their donor nation's citizens and the ability of the project to raise additional funds through media exposure.

A critical issue was the inclusion in every project scope of civilian demining funding. Many initial projects by NGO's and IO's were delayed due to lack of available demining funding. While the actual construction budget had been properly estimated, the organizations believed that the factions were going to "demine" the project site to achieve the 99.6% mine clearance standard. Unable to depend on factional completion, the project had to be rescoped with additional funds committed by the NGO / IO leadership in the donor nation. This caused delays and frustration. IFOR engineers insured that whenever organizations were estimating construction funding, a separate funding line (normally 10%) was included at project initiation to secure required support for civilian demining.

One successful technique that resulted from the combined efforts of the IFOR engineer and the infrastructure-working group was the designation of focus areas for reconstruction. A million-dollar project to upgrade wells was no good if there was not a complementary project to upgrade resettlement housing. These houses would require route, electric and telecommunications repair. Any one of these projects without the supporting other services and facilities could limit the potential of the area to rebuild and prosper.

The group, working in conjunction with the other committees and the factions, designated certain "focus areas" for reconstruction. A prime example of a "focus area" was the City of Brod, a former Muslim City of 10,000 that had been completely destroyed in the ZOS south of Brcko. The war had made this area one of the most completely devastated communities of Bosnia. Engineers initiated the effort by directing both factional mine clearance efforts and civilian deminers in the region early in the project formulation stage. Engineers orchestrated the restoration of the road network while a NGO provided funding for house repair. World Bank committed to repair the damaged high-tension electric lines and to restore telecommunications links with Brcko. IO's signed up for repair of the water system and religious structure while a Bosnian governmental agency concentrated on the repair of the local school. Brod quickly

became a center for reconstruction activity and validated the concept of "focus area" development. Any one project would have limited the lure of refugees to the area, but the combined result of all projects coming together to recreate a community created a synergistic result not envisioned by any one organization.

To emphasize the various methods, techniques, and results of the IFOR engineer efforts to facilitate external agency construction, four different examples of project design and execution are explained in the next section. The role of the military engineer to serve as an essential player in the development and execution of the reconstruction plan for the Posavina Corridor was not in the doctrinal list of Bosnian tasks. The military engineer, experienced in both the current requirements and future endstate, was able to play a necessary and central role in stimulating and synchronizing the reconstruction effort. Working in the undocumented role of regional construction facilitator, he was able to multiply the efforts of the *"peace building"* program.

SECTION 4 - *"PEACE BUILDING"* THROUGH INFRASTRUCTURE REPAIR:

In an effort to reflect the synergistic effects realized through the consolidated efforts of all players of the Infrastructure subcommittee of the Posavina Working Group, the

monograph will use four project case studies. These projects represent several of the challenges, techniques, cooperative partnerships, and "*peace building*" results which are possible in a joint, multinational environment of IO's, NGO', national, international and military organizations all focused on a common cause and vision.

PROGRESS ON THE BRCKO RAIL/BRIDGE/PORT INITIATIVE:

Chapter 3 introduced the IFOR engineer battalion's proposal to examine the potential repair of the Brcko transportation infrastructure. RFCT engineers proposed that if the Brcko transportation hub could be opened, even one mode at a time, the prospects of increased reconstruction would multiply significantly. In addition to increased commerce creating jobs and potential political stability, there would be many intangible benefits realized. The repair of this integrated transportation system would augment political and diplomatic initiatives, possibly supporting attainment of our strategic endstate.

The amount of destruction to the port, the railway between Brcko and the Zone of Separation, and the massive SAVA River rail bridge was well beyond the scope of the IFOR engineers. The creation of the infrastructure subcommittee in the Posavina working group consolidated many of the external agencies that had similar objectives of renewing both regional and

international economies and commerce. The engineer battalion command group outlined the impact of the Brcko integrated transportation system to the USAID senior engineer, Dr. Kevin Rushing, for review and referral. Following several joint reconnaissance trips to the port, bridge, and rail network. USAID expressed an interest in this project. Meanwhile, pressure from the Engineer Brigade and TFE initiated by the original study submitted earlier to TFE caused an alignment of RFCT, TFE, and USAID objectives. The pending departure of IFOR at the end of the year, combined with the one to two year duration and the complexity of the project, mandated that USAID take the lead on the overall project scope. The initial battalion effort was successful in gaining Division and State Department visibility. With USAID in the lead, follow-on military efforts took the form of supporting actions to facilitate various agencies and deconflict problem areas.

One major area that needed substantial exploration was the opening of the river for commerce and repairing the major port facility at Brcko. IFOR engineers made several trips to the port to complete assessments of damage and possible repair. In conjunction with support from the Mayor of Brcko and the port manager, IFOR engineers met with crane repair industries to obtain and refine estimates to repair the two rail-mounted 7 ton cranes. War debris and riverbed shifts in the last four years

required a certified river bottom survey to comply with barge insurance company policies. A river survey contractor was brought in by battalion engineers to meet and discuss costs, scope and timelines with the Brcko public authorities.

The reopening of the port and subsequent river commerce was much more feasible with the accompanying completion of the Tuzla to Brcko railline. Earlier discussed actions had reconned the line, estimated the damage and provided division level leaders with required actions to re-establish the line. The two small rail bridges damaged just south of Brcko needed roughly $350,000 of repair. Additionally, a 2000 meter stretch of railline in the ZOS had been stripped of rail and gravel ballast. Through meetings with the Posavina infrastructure committee, USAID identified and prioritized the work but could not obtain funding for at least two years. The World Bank was not interested in this project, as they had been fully committed in sector on the repair of the Zupanja Bridge. With minimal help from governmental or private agencies, battalion engineers turned to Division and IFOR headquarters in SARAJEVO for assistance. Following a trip by the battalion commander to Sarajevo to meet with the IFOR engineer, this project was identified for future tasking to the Italian IFOR railroad repair company. The result was that IFOR headquarters would resource and fund the repair of the two bridges and the missing track as a strategic initiative

at the international level. (This work was actually accomplished by the Italian Company in 1997 with the Tuzla to Brcko line opened for travel by December 1997).

Pieces of the puzzle were beginning to fall in place by the international agencies and IFOR headquarters. The road bridge had been constructed across the SAVA River earlier in the year by the 23rd Engineer Battalion in conjunction with Hungarian engineers and an American contractor. Efforts to open the port, the river, and the Tuzla to Brcko line would allow commerce and economies to develop in the Brcko region. The major challenge outstanding was repair of the massive SAVA rail bridge between Brcko and Croatia. This was the last link in completing the line from Sarajevo to Tuzla to Brcko north to the rest of Europe. This was also the line that would allow IFOR to redeploy all equipment out of Bosnia by rail rather that drive it to Hungary.

In an effort to solicit additional support, Dr. Rushing from USAID was taken to the Brcko bridge site by the IFOR engineers and briefed on the scope of damage and challenges to repair. USAID continued to get pressure from TFE, RFCT and the ENGR BDE commanders on the urgency of the bridge for political and economic reasons. In September of 1996, USAID had allocated over $4.5 million to the reconstruction of the damaged span on

the south side of the rail bridge. The project was well underway.

The possibilities of mines in the area beneath the bridge, the complexity of removing the damaged section in close proximity to city businesses and townspeople, and the delay in orchestrating a Serbian contractor were significant concerns of USAID. Partnering with the engineer battalion, it was proposed that the 23rd Engineer Battalion conduct surgical demolition on the destroyed bridge to remove the damage river span, abutment and bank span. Combined with maneuver forces for security and civil affairs forces to inform the civilians, engineer forces possessed the demolition skills and equipment to perform the mission much faster and at no cost. After a formal agreement between USAID and TFE, the battalion executed over 200 detonations in a ten-day period to blast three major sections of the class 100 rail bridge out of the way. USAID contracted with a Croatian firm to rebuild the bridge using Serbian Steel. Steel sections were barged up the SAVA 70 miles from Belgrade, opening the river up to traffic. By December 1997, the first train crossed from Bosnia to Croatia. (All IFOR equipment and supplies for subsequent divisional rotations have used this sole northern access into Bosnia since 1997).

The last remaining part of the Brcko river / rail / road master plan was the hardest, the political challenge of

restructuring the international and national trade and transit agreements. Before the war, all of these critical nodes were intrastate nodes that followed historical procedures and were governed by legal national commissions. The fracture of the Yugoslavian country, combined with the creation of the ZOS and the separation of Bosnia, voided all these conventions. A train which used to go from Tuzla to Croatia had no concern with tariffs, customs, train engine transfer, of signaling protocols - it was all one country with intrastate common procedures. The situation IFOR engineers found in the fall of 1996 was completely different. While IFOR had freedom of movement and the rail line appeared to be approved for completion, the challenge hardest to solve was the re-establishment of the river and rail commissions.

After the war, a train leaving Federation controlled Tuzla had to cross into the Bosnian Serb controlled line south of Brcko. Because the Bosnian Serbs only had seven kilometers of line to collect tariffs and customs, their non-participation in re-establishing the rail protocols prevented the federation from gaining access to central Europe. Additionally, Croatia was now a sovereign country separate from Bosnia. Once the train crossed the new bridge into Croatia, this interface of international travel conventions was encountered again.

Even worse was the SAVA River commission. Before the war, a vessel traveling from Belgrade to Brcko was on internal Yugoslavian waterways with standard navigational protocols and traffic monitoring authorities. There was no need for customs or tariffs. A barge now going from Belgrade to Brcko transitioned from the country of Serbia to Croatia, then through Bosnian Serb-controlled Bosnia ending in Federation-controlled Bosnia. A political agenda by any player to prevent another country's access would limit flow on this newly created international waterway.

In probably the best example of operating well out of combat engineer lane, the engineer battalion attempted to address these political and regulatory challenges with essential players. As the construction pieces of the river and rail plan gained funding and momentum, it quickly became evident that without host-nation operations and participation, this repair work would only create an IFOR LOC, doing little toward civilian economic revitalization. In conjunction with the TFE civil affairs personnel, the engineer battalion command group facilitated a meeting between Bosnian-Serb and Federation rail officials in Doboj to address these issues. While subsequent meetings brought consensus on the engineer portions of international operations, a great deal of work remained at the regional and international level to achieve consensus.

While not successful in achieving any solid agreements, the important point in this example was the efforts made by military engineers, working well outside their doctrinal lane, to bring together the players of the peace process. An assessment of the actions needed, raised to the proper international relief agencies and organizations, started the identification of actions needed to rebuild the region. Through the integrated use of several different assets (USAID, IFOR engineers, factional governments) military engineers developed an overall plan to complete a required project that had significant military and economic impact. The project served as a vehicle to bring together the two sides of the former warring entities, hoping to resolve the problem in the interest of an economic benefit and political stability. What many might construe as mission creep is really the ability of the military leader, on the ground and familiar with the conflict dynamics, to facilitate a regional solution which energizes and unites the external civil players.

BRCKO PUBLIC SCHOOL UPGRADE:

The reconstruction of the main inter-city Brcko elementary school is an excellent case study how the military engineer can integrate with external agencies to accomplish a task that had operational and strategic significance.

During the war, the primary elementary school in central Brcko had been severely damaged by mortar and direct fire weapons. A four-story structure originally occupied by over 1200 students, the building continued to be used throughout the last several years for first through sixth grades. All the windows had been broken and recovered by plastic, mortar rounds in the roof allowed constant leaking, and the facility heating system was abandoned and wood stoves put in each room, vented out the window. All restrooms were destroyed with children having to go outside in the woods to go the bathroom. The electrical system worked in only limited rooms and there was no water in the building.

In the summer of 1996, several requests from the Mayor of Brcko were provided to the growing number of NGO's and IO's. Extent of the damage was more than they could afford without a consolidated partnering effort. The organizational goals of many of these agencies did not allow a joint project; the donor's wanted to identify with a specific project and a given endstate. Additionally, force protection concerns and tensions over the unresolved arbitration in Brcko forced most international relief agencies to the Federation side of the ZOS, causing significant imbalance in the distribution of international funding. The previous chapter discussed some strictly IFOR actions taken earlier in the year to relieve this

imbalance, but the Bosnian Serbs were very aware they were not getting their share of international aid.

In an effort to bring IFOR soldiers closer to the communities and use some of the construction capability which was now available, IFOR engineer headquarters in Sarajevo designed a "*peace building*" initiative called "Operation Gold Dust". Each engineer unit provided a nominated project that would combine a critical humanitarian need and public media opportunity with the skills of a military engineer unit. To relieve the disparity in the RFCT sector, the engineer battalion nominated the Brcko school, one of the only Bosnian Serb projects accepted on the Serb side of the ZOS. IFOR provided $60,000 of funding with minimal project oversight or restrictions.

The Brcko School renovation was assigned to one of the engineer companies who contributed over 3000 man-hours of effort to the project in a 45-day period. The 700 students currently attending school were set up in temporary accommodations on the third and fourth floor while the engineers concentrated on a limited scope of repair on the first and second floor. Renovations included clearing all debris, repair of bullet and mortar holes, painting all walls and ceilings, replacing all window glass and electrical fixtures, and repair of one bathroom per floor. Soldiers trained in mine warfare now worked 12 hours

days scraping and painting. The project was a major commitment on the part of the battalion to shift from ZOS operations to the completion of the civil action project.

The renovation of the school was probably one of the most successful examples of actions at the tactical level that had operational and strategic ramifications at the national level. The military objective was never the repair of the school, it was possible to contract all the work out and never put an IFOR solider in the building. The gain was measured by the second and third order effects that were seen as the peace multiplier.

First, the project was in downtown Brcko and directly on the main road from Serbia through the corridor to Banja Luka. Any Bosnian Serb that passed, whether local or national, noticed the IFOR convoys and large IFOR project sign in the school's front yard. IFOR engineers were everywhere, buying paint and tools in the local hardware stores, sharing MRE's with school children and providing tours to the neighborhood officials. Every one of the 700 children that went home every night told their parents about the soldiers who were rebuilding the school. This visibility had several effects. It showed Brcko and the Bosnian Serbs that IFOR did care about the town and the local people. It showed the human dimension of the American soldier; the compassion and dedication committed to a project that earned him no personal gain or reward.

Secondly, the project broke the ice for the international relief agencies, not just in the remainder of the school but in the rest of Brcko. Seeing the IFOR soldiers work inside the city without any violent incidents caused other NGO's and IO's to team-up on the project. Working through the Posavina Working Group and battalion Task Force civil affairs channels, engineers were able to find relief agencies to collaborate in completing the entire facility. Norwegian's People's Aid donated money for the repair of the third and fourth floor while World Vision undertook the repair of the facility heating system. The initiation of the project served as a catalyst to other relief agencies that Brcko was a town receptive and deserving of international assistance.

Finally, the project got the attention of the national Bosnian Serb government. Having complained about unequitable distribution of relief efforts to IFOR officials, this project was concrete proof that IFOR would take their own soldiers to help balance the sides. At the grand opening of the renovated school, the Commanding General of Task Force Eagle, representatives from IFOR headquarters in Sarajevo, and the Deputy minister of the Republic of Srpska congratulated the soldiers on their efforts and impact. Media sources from European and Serbian TV, IFOR, TFE and the local press provided extensive coverage of the ceremony and the city's "Appreciation

Dinner" following the event. The project was a prime example of the optimum use of the military engineer in "*peace operations*". While only 28 soldiers strong, the application of this resource toward the "*peace building*" leg of the peace operation triad and the resulting political and diplomatic gains far outweighed a ZOS patrol or base camp upgrade mission. The military engineer commander at all levels must insure he can accomplish his specified tasks to standard and actively seek out critical opportunities where the versatility of his engineer soldiers can achieve a peace multiplying affect.

MAJOR ROAD, HIGHWAY and ROAD BRIDGE UPGRADE:

At this point in Operation Joint Endeavor, major organizations were providing significant funding and engineer resources to Bosnia to assist in the "*peace building*" efforts. In addition to USAID, World Bank and the International Management Group (IMG) were essential players. Organizational objectives included support of enterprise development and rehabilitation of infrastructure and the social sectors to jump start economic recovery and create jobs. The World Bank, together with other multilateral and bilateral donors, programmed over $5.1 billion in external financing to support priority reconstruction projects.

Several major projects identified earlier on the battalion's critical project lists were provided to the infrastructure

members of the Posavina Working Group. While NGO's and IO's could handle many small functional and local priorities, the larger international agencies concentrated on major infrastructure initiatives. Through a period of information sharing, on-site assessment and reconnaissance, projects were sub-divided and apportioned under the guidance of the RFCT commander, the representative of the UN High Representative, and the international agency proponents.

World Bank representatives agreed to take the lead of the Infrastructure Committee from the IFOR military engineer commander and orchestrated several reconstruction initiatives. The most visible and challenging project in the sector was the repair of the primary highway bridge into Bosnia from Croatia located at Zupanja, the same bridge that had forced the infamous float bridge crossing. World Bank agreed to apply their funding and construction management support to this requirement resulting in the 1998 construction of a $8 million dollar bridge reuniting the two countries. In conjunction with IMG, international agencies developed a three-year reconstruction plan to support repair to power and telephone lines from the Posavina Corridor to the main facilities in Tuzla. Additionally, they contributed to public works upgrades, district heating repair, farm reconstruction, landmine clearance, and transportation renewal.

The Posavina Working Group was able to supplement World Bank projects with USAID and IFOR funding. In addition to the Brcko transportation projects, USAID committed over four million dollars toward local and regional reconstruction efforts. Projects varied from village water systems, renovation of homeless shelters, reconstruction of local bridges, electrical system and hospital upgrades, and communication connections.

Through the constructive efforts of the Infrastructure sub-committee, using both contractual and IFOR engineers, the brigade was able to complete in 1996 over $10.6 million in infrastructure projects which directly benefited the Posavina Corridor. Another $8.2 million in projected out-year funding was programmed to complement on-going initiatives. IFOR engineers were able to complete requirement assessments, prioritize the urgency and impact, and facilitate governmental and civilian agencies to effectively partner for a regional construction plan. In the brigade sector alone, these improvements allowed the freedom of movement of local civilians on Route Arizona to jump from a low in May, 1996 of 20,000 to a high by the end of the IFOR duration of 110,000.[66] Most importantly, these projects ultimately renewed the economic recovery of the region and began to show the people of Bosnia that the international community was committed to assist in the reconstruction of their country.

COMMUNITY INFRASTRUCTURE REHABILITATION PROJECT:

The Community Infrastructure Rehabilitation Project (CIRP) was developed by USAID to respond to several urgent needs that were identified by military commanders in the summer of 1996. USAID provided $5 million dollars to generate visible assistance to local communities and energize the economic recovery and civilian implementation of the GFAP. CIRP provided temporary employment for demobilized military personnel, stimulated the return of displaced persons and most importantly, demonstrated tangible benefits of the peace process. The intent was to provide a quick start producing a big impact, visible to all factions. Military commands, in conjunction with local municipalities and faction leaders, joined to identify and nominate critical requirements that meet the established project guidelines.

Military engineers were critical in the CIRP process as they assisted sector Task Force commanders assess and estimate projects for nomination. Projects normally ranged from $20,000 to $50,000 and were to be constructed with US contract supervision over host nation companies. Working in conjunction with NGO's and IO's who often had alternative agendas, this program provided yet another tool with which a military commander could direct a needed requirement. IFOR engineers focused on medical and school facilities, water supply and

heating systems, waste management, demining, rubble cleanup, small bridge repair, and street light operation. In the period of time that the 23rd Engineer Battalion was in Bosnia, this program resulted in over 86 projects at a cost of $900,000 in Bosnian Serb projects and $800,000 in Federation projects.

This example, combined with others in this section, relate the various funding and assistance channels available to support the reconstruction effort. Every single requirement has different benefactors, types of expenditures, and time and cost variables. All the providing agencies, whether UN, NATO, international, national, governmental, private, U.S. military, multinational or host nation has a given organizational agenda. That agenda relates to a specific function, faction, region, ethnicity, political aim, economic reform or diplomatic objective. The military engineer, acting as a "behind the scenes" facilitator in the "*peace building*" process, must quickly understand the dynamics of these issues and his role as a central integrator in this process. The ability to match a given requirement with an available source of funding and resources will result in reconstruction progress. More importantly, however, is the ability of that engineer to link these projects, funding streams, and political agendas into an infrastructure improvement campaign with a common vision and an obtainable endstate. Media-driven organizations, looking for

low risk and maximum payoff, will competitively seek out several high visibility projects. The engineer who can also facilitate and resource the unpopular, high risk, high political payoff projects is the leader who will create synergistic results and earn the reputation as the peace multiplier.

SECTION 5 - SUPPORT OF POLITICAL PEACEBUILDING INITIATIVES:

In addition to facilitating the infrastructure function of the Posavina Working Group, several other engineer initiatives supported the attainment of the "*peace building*" endstate. It is important to stress again that while "*peace building*" efforts in support of infrastructure repair and military support were strategically important, at the same time several other actions in accordance with the original campaign plan are happening concurrently. "*Peace building*" can only succeed if the "*peace enforcement*" efforts started at D-DAY are sustained and "*peacekeeping*" missions to insure adherence to the military provisions of the Dayton Accord are supported. Additionally, redeployment planning and basecamp consolidation and tear down compete for time and resources. Therefore, there must be a careful balance of engineer forces doing "*peace building*" initiatives; they cannot be done AT THE COST of the more important sustainment and force protection missions. What this monograph and the next section highlight are ways to use

available effort, at little cost and high payoff, to contribute to the accomplishment of the political objective while not risking degradation of the base task. It was only through the actions of a standard prioritized campaign plan that kept everyone in line with the commander's intent. Leaders would only tackle a lower level *"peace building"* mission if higher priority PEO and PKO missions were sustained to standard.

COUNTERMINE TRAINING OF NGO's/IO's/FACTIONS/CIVILIANS:

Through daily missions, increased responsibility and more complex missions, it quickly became apparent that our Non-commissioned officers and solders were the experts on countermine missions and mine awareness training. Leaders at all levels, entrusted with a given sector of ZOS and infrastructure, personally became possessive of mine incidents and threats in their region. The philosophy went through the command that IFOR was responsible for the safe conduct of civilians, factional soldiers, external agencies, and the IFOR force. In an effort to leverage this talent and responsibility, IFOR engineers sought innovative ways to use their expertise to save lives and improve the peace process.

Training of external agencies:

The massive influx in the summer of 1996 of external relief and humanitarian agencies quickly created dangerous conditions in the area of the Zone of Separation. The majority of all

damage and density of civilian reconstruction need was in the heavily damage four-kilometer wide zone adjacent to the trenches and minefields. In additional to direct weapon impacts on public facilities and housing, all infrastructure (road / rail / power) in the region was non-operational either through damage, theft, or neglect.

It follows then that the center of mass for all NGO, IO and governmental assistance was to concentrate efforts and begin essential minimum repair to people attempting to resettle in the ZOS. The competing dynamic was the areas needing the most repair were locations of the worst fighting and therefore, areas with the largest density of emplaced mines.

Several times during the early summer months of 1996 IFOR patrols and mine-clearing crews working in the ZOS would observe a new European licensed four-wheel drive with nicely dressed workers from an NGO or IO driving down an unproofed road. In an effort to survey an area for their particular effort, they would use a civilian map, with no mine locations identified, to drive to areas that needed site inspections.

To prevent a catastrophe, the brigade, task forces and engineer command developed a plan to identify, brief and train newly arriving external players to the mine threat. Individuals were identified either at brigade-controlled checkpoints on Arizona or the float bridge, at local JCC meetings, or while

performing visits to local governmental officials. Having perfected a "newcomer mine awareness" briefing for incoming soldiers, all external visitors were directed to the nearest engineer headquarters to get a similar briefing. Current maps overprinted with mine data and locations were passed out. A description and static display on UXO's and mines was provided, and actions during a mine strike covered. If the visitors needed to visit an area which had not been proofed, then the responsible engineer commander was notified to schedule through the next Work Coordination Meeting a factional engineer to escort the agency personnel through the site. During this meeting, a brief analysis of the density of mines and the impact on any reconstruction effort was explained to refine the demining scope of the project.

Faction Engineers:

In the first engineer JMC, factional engineer leaders were briefed that current IFOR procedures prevented IFOR engineers from removing any mines. Faction engineers must locate, disarm and remove mines. The question of equity and safety constantly arose; why could a factional engineer die but not an IFOR engineer. With a straight face and firm stand, IFOR engineer commanders continued to emphasize that this was not IFOR's war. IFOR did not put the mines in the ground, and no letters were

going to IFOR parents telling them their son died taking out a Bosnian mine.

While this was a hard concept to accept, eventually the discussion turned to additional countermine efforts IFOR could provide the factions to minimize risks. As mentioned earlier, IFOR did provide mine detectors, protective full body mine blast suits, and IFOR would conduct all proofing of a minefield cleared by factions. With the transition from "*peacekeeping*" to "*peace building*" at the six-month mark, several of the experienced factional engineers had left the unit to move elsewhere or go into a civilian job. Consequently, the resident expertise in daily mine clearing was eroding and the resulting risk in a factional mine strike increasing.

While not conducted under the author's duration in Bosnia, this problem was solved through the consolidated efforts of a follow-on military engineer battalion,[67] the IFOR Engineer office in Sarajevo and the UN Mine Action Center. A "Humanitarian Demining Academy", in a "train the trainer" mode, was established to train factional engineer team leaders to prepare them for the upcoming summer demining campaign. Tasks trained included demining techniques, instructor techniques, multi-national operations, and military to military interaction with IFOR soldiers. IFOR officers and NCO's trained over 32 factional leaders during the four week course so each of them

could return to their unit to train their squads and platoons. While the primary task of reducing factional minestrikes was met, the secondary effects had a larger affect on the overall peace objective. The academy fostered democratization of the military, the reinforcement of a NCO Corps in the Bosnian Army, and unmeasurable leverage in the understanding that IFOR was committed to the safety of the Bosnian people.

Training of Civilians:

In a coordinated Civil Affairs and Engineer initiative, a significant amount of countermine training was conducted for local civilians. The majority of the adults in the area were aware of the mine threat but several years of war had allowed a generation of school children to grow up without this awareness. Children were now riding bikes and walking in the proximity of minefields. In the role of an IFOR ambassador, combined engineer and civil affairs teams, accompanied by translators and CA publications and coloring books, would visit a local school for a mine awareness briefing. The de-militarization of several former factional mines, extracted through mine clearance operations, provided every unit with a robust static display capability. In addition to discussing emplacement methods and spotting techniques, children were trained on what to do if they saw or found a mine. IFOR would record the location and schedule a mission to remove it.

Data collected over the first few years of the overall IFOR deployment verified the success in decreasing civilian monthly mine incidents. In the spring of 1997, civilian minestrikes averaged 50 per month for the entire Task Force Eagle sector. By the end of the year, after renewed education and awareness, minestrikes averaged four per month.[68] In addition to saving hundreds of civilian lives, the more important second order effect was the political and diplomatic results of these visits. Children learned that IFOR was present to stabilize the country and set the conditions for peace. They learned that IFOR soldiers, most of who were under 25, were likable, concerned, and approachable. Several times during the deployment IFOR was approached as a result of these interactions to remove a mine or act on a tip a child had provided.

SUPPORT TO CIVILIAN DEMINING:

The substantial increase of external agency participation in infrastructure repair brought created a proportional increase in the requirement for mine clearance and demining. The majority of the mine removal efforts during PEO and PKO had been done as "mine clearance" missions by the factions where the focus was on removing known mines that could be located in the ground. IFOR would verify removal against the emplacement document and provide mechanical proofing. The IFOR standard for minefield endstate was total proofing of every square inch of the ground

to achieve a 99.6 percent validation standard of the absence of mines. The time, effort and cost of this necessary but complex standard far exceeded IFOR's and the factions mandate. This generated a shift throughout the theater from mine clearance for freedom of movement to "demining" for reconstruction and civilian use.

External agencies were briefed on the level of mine emplacement in their area and hired civilian deminers to prepare and demine the construction site. The arrival of deminers generated many new and non-doctrinal missions for engineers that quickly were adopted throughout Engineer Brigade units as standard procedures. The initial task was to provide the countermine and mine awareness training given to external visitors, but the focus was more on the technical side of Bosnian mine emplacement characteristics. The purpose of the NGO / IO / school visit briefings was to avoid minefields and if located, notify IFOR. The focus of briefings given to civilian deminers was how to stay alive inside a minefield. The training concentrated more on depth of burial, alignment patterns, deterioration over time of mines and fuses, and identification of homemade mines unknown to the deminers. To assist the process, IFOR would link up the civilian deminers with the factional engineers that emplaced the mines to clarify densities

or location data. This resulted in an on-site visit between IFOR, the deminers, and the factional engineers.

Modifications in the minefield reporting database had to be made to include demining operations conducted by civilian companies. Factional engineers had spent four years perfecting their mine information. IFOR engineers had refined the data from all three factions into a very detailed, complex database reflecting all emplacement and removal data in two languages. It was critical at this point to insure that the purity of the data was not degraded by inaccurate and incomplete procedures and documentation on the part of civilian deminers.

Concerning actual verification, IFOR engineer units did not have the resources for on-site mine removal validation. The restriction and liabilities in contracts between the NGO / IO and the demining company were so stringent that civilian companies were usually more concerned for their own financial welfare. This forced the removal data proved to be reliable. Several times engineer units would conduct unannounced visits to the demining location to insure compliance with necessary procedures and documentation. Any violations of IFOR-mandated procedures would be raised to the contracting NGO / IO for correction or termination of the contract.

The infrastructure project required the guaranteed absence of mines, forcing the deminers to clear mines from multiple

factions arrayed in overlapping minefields. This often created the need for more than one faction's involvement in the demining reconnaissance. Additionally, detonations of located mines had to be performed within IFOR certified blast ceilings to prevent damage to local facilities. In an effort to deconflict IFOR aerial overflights, all civilian deminers had to adopt IFOR blast notification protocols. This required calling the engineer headquarters to receive a detonation approval and blast window then waiting until a brigade-wide net call alerted IFOR units of the time, location and size of the blast.

While initial operations were slow to gain momentum, the overall system developed and executed worked well for both IFOR, the factions, and the civilian deminers and prevented any injuries in the infrastructure demining process.

ENGINEER SUPPORT TO NATIONAL ELECTIONS:

One of the doctrinal missions of the peace-building force was the support of national elections. Under the Dayton Accords, the factions requested the OSCE to supervise the preparations and conduct of the elections in Bosnia and Herzegovina. According to the GFAP, IFOR and the parties had to set the conditions in which fair and free elections could be held without fear of intimidation, and ensuring the freedom of speech, of the press, and of association.[69] Elections were to be completed by 14 September, 1996 and were the first step toward

democracy, lasting peace and economic reconstruction. There was no guarantee that Muslims, Croats, and Serbs would ever come together again as citizens of a shared state with a common destiny. The whole point of Dayton was to give them a chance to try. Although the U.S. was not in the business of building other nations, IFOR could set the conditions for Bosnia to help rebuild itself.

OSCE organized and was responsible for the actual control of the ballots and the running of polling booths on the day of the elections. The lack of mass transportation, combined with the international demand for large voter participation, mandated a large number of local polling stations to maximize voter turnout. In the RFCT sector alone, there were 313 polling stations spread out over the entire brigade area. Due to the large number of displaced persons during the war, several voters wanted to cross the Zone of Separation to vote in their pre-war village or city. This movement would cause a projected flow of 138,000 voters to transit through the sector during the two-day voting window. The most critical area was the seven-kilometer chokepoint of Brcko where a great number of Bosnian Serbs were expected to travel from Serbia into Bosnia.

Military support missions involved a vast degree of command and control oversight, quick reaction forces (QRF's) and maximum IFOR presence throughout the sector. The large number of sites

and the limited number of four vehicle convoys meant that IFOR would not guard polling sites. IFOR patrols throughout the sector were used to create a secure base for peace on voting day by maintaining a visible, reassuring presence.

Engineer forces supported the elections in numerous ways, most of them reactive in case of conflict. Engineer platoons possessed the firepower, ground troops, and leadership to conduct patrols of entire polling regions, thereby reducing the requirement on maneuver forces. Construction forces formed rapid roadway repair teams to respond to a manmade obstacle emplaced by disgruntled civilians. The battalion's attached Explosive Ordnance Detachment (EOD) performed pre-election clearance of booby-traps and personnel mines, as well as reaction teams during the election period.

The remainder of the engineer sappers of the unit supported Task Force operations at projected flashpoints through the application of mobile obstacles. Factions had perfected the use to "mass peaceful formations" to pressure checkpoints and cross the ZOS in contentious resettlement areas. The sudden consolidation of hundreds of angry civilians concurrently arriving at a checkpoint like the Brcko Bridge guarded by a squad of IFOR soldiers would overwhelm friendly capabilities. Because IFOR was unwilling to use deadly force on unarmed,

peaceful civilians, the crowds would push through the checkpoints and demonstrate on the opposite side.

Engineer forces in TFE had experimented with several unique crowd detention techniques to assist and delay advancing crowds. While still evolving, the use of pre-constructed, mobile concertina wire obstacles arrayed in depth would slow the crowds' forward movement. Engineer's also successful contained crowds pressuring a critical broadcasting station through the effective formation of the engineer armored bulldozer (ACE). The linear formation of six-foot high dozer blades contained the crowds and diffused the demonstration.

These tactical initiatives need additional refinement and Engineer School concept development but provide some insight as to the roles and missions expected in support of national elections. While not having any direct strategic effect, the old adage of peace operations bears repeating. In "*peace operations*", incidents or faction conflicts at a decisive flashpoint at the tactical level quickly have strategic and international implications. The beating of an IFOR soldier at the Brcko Bridge and the recent death of a Serb demonstrator in Brcko elicited countrywide reaction and violence. Soldiers need to understand the missions expected of them and be properly trained and resourced to carry out those missions successfully.

SECTION 6 - TRANSITION TO FOLLOW-ON FORCE:

While Operation Joint Endeavor was designed as a five-phase operation of 365-day duration, the conditions required for the departure of the military force had not been met by fall of 1996. The implementation of the military provisions of the accord had proceeded smoother than anticipated. Short-term compliance with the military aspects - while essential for overall success, did not ensure achievement of the overarching U.S. national objectives outlined in the NSS.

Success in implementing the military elements of the peace agreement had not been matched on the civil side. The arbitration of Brcko was delayed causing additional requirements for military presence to ensure compliance until such time that conditions warrant a withdrawal from the area.[70] Despite IFOR's successes in improving freedom of movement, the return of refugees and displaced persons had not occurred at levels necessary to resolve potential resettlement disputes. A primary cause of the conflict was the inability of one ethnic faction from living under the political control of another. These attitudes had hardened over the four years of fighting and the rebuilding of sustainable governments was an objective that merited substantial energy and resources.[71] Finally, the restoration of Bosnia's economic systems and structures had not progressed to a level needed to stimulate local economic growth.

These indications, combined with a general sense of continued tension following the Bosnian national elections in September 1996, raised serious questions on the ability to terminate the mission at the one-year mark. The President, in consultation with Congress and DOD, determined in the fall of 1996 that a lasting peace in Bosnian without IFOR would involve a great deal of risk. This decision forced an extension of the IFOR mission with a reduction from the 20,000 man IFOR force to a smaller Stabilization Force (SFOR) of only 8,500 military personnel. This change of mission generated several transitional tasks and redeployment preparations for the IFOR force. Two critical missions that needed to be accomplished by IFOR engineers were the transaction of operations to a follow-on force and the reshaping of the base camp footprint.

Base Camp Closure / Upgrade Plan:

While not a critical peace multiplier, IFOR engineers expended a great deal of effort at the battalion command and control level and in soldier execution to reshape the brigade basecamps for the incoming force. The mission was straightforward; downsize the existing architecture of 15 basecamps, 3 remote signal sites, and 4 functional operating points which supported and housed over 8500 soldiers in the RFCT brigade. The endstate would be a battalion-sized maneuver

force arrayed in two main basecamps, one remote signal site, and two permanent checkpoints along Arizona.

Camps were assessed for their potential to serve as permanent camps on several variables. The tactical capability of the basecamp to protect itself from indirect, roadside and urban enemy fire, combined with favorable fields of fire, was a critical variable. Another important consideration was the proximity of the camp to main supply routes, reaction time to factional flashpoints, and equitable distribution among various factions. Also important was the cost of existing construction measured against the cost to upgrade the camp to improved force protection and quality of life standards. Assessments were made on all camps, variables analyzed and compared, and maneuver commanders appraised of the engineer recommendation. The final endstate in the brigade sector for the SFOR force was retention of two large cooperative farm-based camps (Colt and McGovern) which best met all criteria for permanent status.

Following substantial planning and engineer effort, an extensive engineer operation was conducted to decommission 13 camps and transfer all materials and troops into the two permanent camps. Several competing dynamics made this a complex and resourced constrained task. The ultimate goal was to complete the restructuring before the SFOR force arrived to reduce their workload and allow SFOR to focus on mission

training and execution. Permanent camps, now with an extended lifetime of at least one year (currently on their fourth year) were scheduled for substantial increase in force protection capability, upgraded morale and welfare facilities, and relaxed occupancy ratios within a sleeping structure. Additionally, increasing congressional awareness on IFOR expenditures, especially in the LOGCAP sustainment contract, mandated an 80% reutilization rate of materials recovered from a decommissioned camp. This delayed construction projects in a permanent camp until the materials were released from a decommissioned camp. The design population of the endstate camps was 2,200 soldiers, yet at the time of the transition; the 20,000 IFOR and the 2,200 SFOR soldiers all needed basecamp accommodations. This prevented full decommissioning of closing camps and overcrowding of permanent camps during the overlap and construction process.

Through several initiatives involving partial decommissioning, permanent camp temporary expansion, and a temporary increase in facility occupancy, the plan was completed to standard and the SFOR force assumed the sector. This task was highlighted to reflect the competing demands on the engineer force. This reconstruction occurred at the height of the "*peace building*" main effort. NGO's and IO's were coordinating infrastructure projects, deminers were making successful progress with factional engineers, external agencies and the

Posavina Working Group were all focused on a common endstate, and the minds of the troops were all concentrating on returning home after a year long deployment. Training and transition to the incoming force still had to be accomplished. A myriad of tasks lay ahead to return the battalion's soldiers and equipment to Germany and retrain them for high intensity combat missions. These high-priority missions, all critical, ranged across the spectrum of competing demands that are prevalent at the end of any deployment. The successful military engineer unit and staff clearly must focus on the attainment of these missions safely and to standard. Most importantly, the engineer must insure that the progress made on the operational and strategic levels toward effective *"peace building"* are transitioned to competent civilian elements of the peace process and the supporting military engineer which assumes the follow-on mission.

Execute Training / Transition Plan:

The IFOR commander's intent was to insure the follow-on force was well postured to accept all missions and the IFOR to SFOR transition was transparent to the factions and the local governments. It was critical that while the faces of the U.S. soldiers and officers might change, the commitment to force protection, strict compliance to provisions, and aggressive efforts to continue the peace process were consistent between the two forces.

Detailed mission analysis and staff planning insured a smooth transition in all areas of engineer involvement. The 57% downsizing from IFOR to SFOR meant that every unit would turn their mission and sector over to a lower echelon unit. A battalion Task Force assumed the Brigade sector, an engineer company assumed the engineer battalion mission, and an engineer platoon assumed the engineer company mission. In all roles and missions, an extensive "right seat ride" program was developed which placed current leader with incoming leader to conduct a full, high intensity cross-training program at least five days in length. Every single task, skill and responsibility was either transferred or consciously decided to elevate to a higher level to prevent an over-abundance of missions.

In the *"peace enforcement"* and *"peacekeeping"* role, incoming SFOR engineer leaders accompanied their IFOR counterpart to JMC's, BI-LAT's, work coordination meetings, and daily mine clearance missions. Information was transferred on faction engineer leaders, unit strengths and capabilities, and pending demining operations. The absence of a battalion staff forced the transfer of the complex minefield database from battalion level to TFE level where the TFE Mine Action Center continued to consolidate and refine factional data.

Transferring the *"peace building"* function proved to be much more difficult but ultimately had many more significant positive

political ramifications. The SFOR company commander was trained and assessed of all on-going operations in sector but the scope of his responsibilities, experience and capabilities limited his unit's ability to replicate the type of actions the IFOR engineer battalion staff had performed. Consequently, the SFOR engineer battalion commander, now serving as the entire TFE engineer, was brought into the sector, introduced to critical NGO / IO / governmental agency contacts and briefed on critical projects which had operational and strategic stabilizing potential. The demands of a single battalion commander, now serving as the divisional engineer for the entire Task Force Eagle sector, stretched his focus, capabilities, and application of his staff. The IFOR engineer battalion commander was currently stretched between PEO, PKO, *"peace building"* and the daily command of his unit. It could not be expected that a company commander could assume these same tasks or a battalion commander now in charge of the entire division sector. This mandated a stronger reliance of those civil elements to assume a broader role in the Posavina Corridor and the coordination of infrastructure renewal and regeneration.

This transition dynamic was reflected throughout the RFCT brigade sector, from Brigade to Battalion Task Force Commander level. COL Fontenot transferred his mantle as facilitator and organizer of the Posavina Working Group to the regional

representative of the Office of the High Representative (OHR). The leadership, integration and execution of the infrastructure vision was transferred from the 23rd Engineer Battalion to the regional representative of the World Ban, with support from USAID and functional NGO's / IO's. The incoming SFOR engineer staff supported and facilitated this process within their reduced capability. As a result of the reduced military presence and command level in the region, the civil elements and agencies acknowledged and readily accepted their increased role in directing the economic, political and infrastructure reconstruction effort. History has proven that while the military might be the quickest and best structured to lead the early "*peace building*" efforts, the hope for any long term stability and peace must come from efforts accepted and controlled by international governmental and civilian agencies.

This detailed cross training and transfer of institutional knowledge is what allowed many of the initiatives started by the IFOR engineer units to be brought to completion under the monitoring and execution of a follow-on external civilian and military force. As of the date of this paper, this transition process has occurred between 1st Armored Division and 1st Infantry Division (DEC 96), back to 1st Armored Division (OCT 97), and to 1st Cavalry Division in July of 1998. The carefully orchestrated transfer of skills, priorities, and "*peace building*" initiatives

has allowed a successful continuation of the original intent and mission with a great deal of consistency and mission accomplishment. More importantly, it has stopped war, created stability, and through the multiplying effects of the engineer peace builder, laid the foundation of the road to peace.

CHAPTER 5: CONCLUSION

SECTION 1 - SUMMARY:

This monograph has used the challenging and complex deployment to Bosnia to demonstrate two major shortfalls of engineer involvement in Peace Operations.

First and most importantly, military engineer's potential is underutilized to assist in achieving the peace operation endstate. Engineers are uniquely qualified to serve as a facilitator and multiplier in peace operations. Engineer commanders, staffs and soldiers possess unequaled leadership, managerial, and construction assessment skills that allow them to significantly contribute to the attainment of the military objective. Early deployment into Military Operations Other Than War (MOOTW) environments provides an obvious advantage of early comprehension and understanding of the root causes and situational factors of the conflict. Success in the tasks of mobility, security, and lodgment quickly makes the engineer a valuable commodity on the peace operation battlefield. The pace and direction of the "*peace enforcement*" and "*peacekeeping*" operation allows the military engineer to shift assets from the specified doctrinal tasks of military engineering to the supporting tasks of "*peace building*".

Engineers must be comfortable in operating in stressful environments along the spectrum of peace operations. The proportion of their efforts often shifts between the three primary peace operation missions of "*peace enforcement*", "*peacekeeping*", and "*peace building*", often working with differing intensities on all three missions simultaneously.

The military engineer must become an expert at viewing small-scale discrete engineer requirements in the larger context of a regional reconstruction plan. He must assess and prioritize projects in regard to their potential to produce high payoff returns in creating economic and multi-factional stability. Every requirement must be seen as a link to an interconnected web of improved civilian quality of life, renewed prosperity, promotion of democratic values, and support to the legitimate government. The military engineer must stimulate and synchronize the collective reconstruction talents of international and national governmental agencies, non-governmental and private voluntary organizations, and UN or NATO support elements. Working toward a common regional vision, the engineer needs to serve as a catalyst and facilitator toward attainment of that "*peace building*" objective. He must lead from behind, letting the civil elements of the international community achieve their charter under the secure conditions of the "*peacekeeping*" force.

In accomplishing these tasks, the military engineer possesses the potential to be a critical multiplier in the peace operation process. His accomplishments achieve a much greater effect than the sum of the individual resources applied. He combines the successes of critical missions to achieve a resulting cumulative effort that is much greater than the sum of its parts. He is a valued and respective member of the combined arms team who has integrated mobility, countermobility, survivability and general engineering to build the road to mission success. His soldiers are well trained and protected, his efforts are deliberate and well planned, and his projects valued by his customers. The military engineer understands that any peace operation has the potential to escalate from peace to "*peacekeeping*" through "*peace enforcement*" to high intensity war. Conversely, the process may be reversed or be entered at any point or time in the transition along the peace spectrum. He knows that only through the successful completion of his specified tasks can he ever hope to achieve the more operationally and strategically important goal of the overall political endstate.

The second major shortfall is a doctrinal disconnect between our current doctrinal publications and the roles and missions of what engineers are currently doing on the "peace operation" battlefield. This monograph has applied current doctrine against

the most recent peace operation deployment. While joint publications are making strides to improve and upgrade joint doctrine, U.S. Army engineer doctrine does not correctly document the roles, missions, and expectations of the engineer peace operation force.

This monograph could have outlined the 20 to 30 different multi-echelon tasks experienced by the author's units in Bosnia in a simple two or three page list of bullets to resolve this shortfall. This was clearly not the point. While perhaps detailed and exhaustive, the monograph instead introduces these roles and missions through the explanation of the IFOR yearlong deployment and a thorough understanding of daily operations. It was important to provide a tactical and operational framework of competing demands and expectations to truly understand the complex alignment of overlapping PEO, PKO and "*peace building*" phases. The resulting goal was a realization by the future-deploying engineer of the unique requirements the military engineer has in peace operations that are not spelled out in any book, classroom, or operation order. The future engineer must expect in any deployment to augment this doctrinal task with "*peace building*" opportunities that are present but might not materialize by themselves. The military engineer needs to aggressively seek out these opportunities to be able to best

leverage his engineer resources towards attainment to the military and political endstate.

SECTION 2 - LESSONS LEARNED:

All the techniques, procedures, additional missions and command and control initiatives explained in the monograph can rally be summed up in four lessons learned. Each of these is worthy of additional study and several of them have application to other joint and army branches. The lessons learned are departure points for future analysis in how best to integrate, train, resource and implement the individual lessons. While explained in detail and through vignettes in the monograph, the restatement of the lessons learned is meant to leave the reader with a more global and overarching understanding of the engineer role in peace operations.

POINT #1. Know the U.S. national objective and endstate:

Leaders from the platoon to division level must fully understand the expected national endstate and corresponding military contribution of the given mission to achieve that endstate. They must have a basic understanding of the different instruments of U.S. and international conflict resolution through the application of the economic, military, political and informational instruments of national power. If only familiarized, all leaders need to understand how the

accomplishment of their mission, and potential non-specified host nation requirements, plays into the bigger accomplishment of the national agenda. This leader, while insuring the successful completion of his primary task, must be innovative and energetic in finding ways to create synergistic effects through the surgical application of extra engineer capability.

POINT #2. Develop a Peace Enforcement vision and execution plan:

This is the foundation of a unit's actions which ensures the accomplishment of both the commander and the higher commander's intent. Design a vision and military endstate that will become an essential accomplishment in your higher level commander's mission. Insure this vision is built on obtainable, well-defined supporting tasks that stretches available resources and capabilities without risking mission failure. Train and educate all members of your unit on how they fit into the overall attainment of this vision at each phase along the peace operation spectrum. Once briefed and published, allow our subordinates maximum flexibility in their ability to conduct decentralized, independent actions to accomplish supporting tasks. Trust, resource, and support your subordinate units, for their familiarity with their environment, troops and external conditions will allow them to allow the vision to blossom and flourish. If you were successful in educating them on the national endstate, and your vision is synchronized with your

superiors, the successful junior leader will achieve results that could never have been possible if you restricted their initiative. This campaign plan will accomplish your intent.

POINT #3. Become proficient in facilitating agencies:

While many would initially believe that the lack of resources limits the ability of the international community to achieve peace, the opposite is normally true. Funding and resource shortages normally do not account for lack of progress in the peaceful resolution of conflict. The military engineer must quickly master an understanding of the international and national governmental agencies working in his sector and insure his actions are integrated into an overall regional vision. Agencies such as USAID and UN relief agencies are adequately funded and normally looking for a benefactor of their talents and resources. The art of effectively facilitating all NGO's and IO's toward a collective reconstruction effort through the sector must be learned through an understanding of these organization's charters, political agendas, and funding limitations. The successful engineer at any level shares information and partners with these agencies to obtain the greater economic and diplomatic benefit. Engineers must lead from behind to stimulate and synchronize the vast external players and their resources to effectively emerge as a peace multiplier.

POINT #4. Develop an effective project management system:

Existing joint publications and Unified Command contingency plans adequately address how the joint community comes together to conduct regional contingency engineer management operations. These procedures do not address the full complement of external players working in support of nation assistance initiatives. Army doctrine does not apply any Civil Engineer Support Plan systems or propose a service unique cell. Therefore, there is not an adequate doctrinal mechanism in the Army system for assessing, prioritizing, designing, or executing "*peace building*" requirements. Every unit creates independent systems after months of frustration and missed opportunities. Integration of legal considerations, Title 10 impacts, international funding mechanisms and a deliberate project management structure must be developed. Possibly present in civilian agencies or at theater level commands, Bosnia was a prime example where a divisional combat engineer battalion was the most important customer of this capability shortfall. Serving as the primary integrator for all the operational and strategic players in a region, the battalion had to form a unique cell and management systems to collect, analyze, solicit funding, and manage the various projects present in the region. If the Army does not create this capability soon, insure that before any deployment, the managerial and leadership task of

orchestrating and facilitating "*peace building*" projects is war-gamed and appropriately resourced. The potential of the engineer to become a peace operation multiplier is drastically increased if the system provides the proper tools, training, and doctrinal guidance.

SECTION 3 - CONCLUSION:

The United State's participation in the NATO-led Implementation Force has taught thousands of American soldiers the intricacies of conducting peace operations. After-action reports, magazine articles, and personal experiences abound with the unique skills, challenges, and requirements evident in the difficult mission to bring peace to the Bosnian people. We have learned, as an Army, a joint service, and as professional soldiers the ambiguity and complexity of building peace through "*peace enforcement*". Our demonstrated success in diffusing several regional flashpoints and ethnic confrontations has validated our role as a "*peacekeeper*". The use of our military instrument of power, however, is seldom successful at building long term peace.

Bosnia demonstrated to the maneuver forces, the local officials, senior leaders, and the external agencies that efforts by engineer forces had the ability to achieve significant success and impact at the national and international

level. The military engineer force is the right player to aggressively initiate a reconstruction plan and synchronize the various players to a common vision and endstate. While advancements need to be made to resolve doctrine and training shortfalls, the spirit and skills of the military engineer serves as the synergistic core which integrates and champions the peace operation cause. Engineers need to fully understand, exploit, and capitalize on their role to contribute to the attainment of the political endstate. The increased frequency and complexity of world conflict will find that in an effort to integrate all the instruments of our national power, our forces must continue to develop and depend on the role of the military engineer as a critical "*peace operations*" multiplier.

WORD COUNT: 41,852

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[16] Ibid., 29.

[17] Ibid.

[18] U.S. Joint Chiefs of Staff, Joint Tactics, Techniques, and Procedures (TTP) for Peace Operations (Final Draft), Joint Publication 3-07.3. (Washington D.C.: U.S. Department of Defense, 6 April 1998), I-8.

[19] U.S. Army Combined Arms Command, Operations Other Than War: Humanitarian Assistance, Vol. 1, CALL Newsletter No. 92-6. (Fort Leavenworth, KS: December, 1992), III-1.

[20] U.S. Joint Chiefs of Staff, Joint Doctrine for Military Operations Other Than War, Joint Publication 3-07. (Washington D.C.: U.S. Department of Defense, 16 June 1995), III-13.

[21] U.S. Army Combined Arms Command, Operations Other Than War: Humanitarian Assistance, Vol. 1, III-2.

[22] The latest doctrinal procedures and implications of "peace enforcement" operations in Bosnia-Herzegovina are outlined in the unpublished draft of JP 3.07.3, Joint Tactics, Techniques, and Procedures for Peace Operations dated 6 April 1998.

[23] While updated to reflect the Peace Operations, FM 5-100-15 provides a limited outline of combat, topographic and theater infrastructure missions. It provides no insight on the ability for military engineers to contribute to the political endstate.

[24] FM 5-116 was written in Mar 89 and reflects an outdated doctrine for MOOTW tasks while not identifying the types of Peace operations defined in JP 3-07.

[25] U.S. Department of the Army - HQ, USAREUR, Operation Joint Endeavor After Action Report, 37.

[26] Proximity Peace Talks Contact Group, Dayton Accords: General Framework for Peace in Bosnia and Herzegovina, (Wright-Patterson Air Force Base, Dayton, OH.: Proximity Peace Talks Contact Group, 21 November 1995), 13.

[27] William T. Johnsen, U.S. Participation in IFOR: A Marathon, not a Sprint, (Carlisle Barracks, PA: U.S. Army War College, Strategic Studies Institute, 1 April 1998), 1.

[28] William J. Clinton, A National Security Strategy of Engagement and Enlargement, (Washington, D.C. The White House, February 1996), 35.

[29] 16th Engineer Battalion, 1st Armored Division Engineer Command Briefing - March 1998, (Task Force Eagle-Tuzla Base, Bosnia: 16th Engineer Battalion, 14 March 1998), 5.

[30] U.S. Army Combined Arms Command, Fighting the Mine War in Bosnia, CALL Newsletter No. 98-6. (Fort Leavenworth, KS: March 1998), 1.

[31] U.S. Army Engineer School, Engineer Contingency Handbook (Former Yugoslavia), (Fort Leonard Wood, MO.: U.S. Army Engineer School, July 1993), 1-1.

[32] Johnsen, 1.

[33] Rupert Wolfe and Steven Gordon, eds., IFOR on IFOR - NATO Peacekeepers in Bosnia-Herzegovina, (Edinburgh, Scotland: Connect Books, September 1996), 34.

[34] Johnsen, 4.

[35] U.S. Army Combined Arms Command, Joint Military Commissions - Tactics, Techniques and Procedures, CALL Newsletter No. 96-8. (Fort Leavenworth, KS: September 1996), I-1.

[36] Ibid.

[37] The monumental task for completing this work was done by the TFE divisional Mine Action Center (MAC) under control of the Engineer Brigade Headquarters.

[38] This monograph will not discuss the procedures that go into escorting parties across the ZOS to the JMC site, the security arrangements, the establishment of the agenda, the rehearsal or running the meeting. Details on these subjects is in CALL Newsletter 96-8, dated September 1996. A CALL representative was present and the techniques perfected at this and the RFCT JMC generated the CALL JMC publication.

[39] For a detailed explanation of the drill, see 23rd EN BN ZOS BREACHING DRILL published in CALL Newsletter 96-5, page B-4.

[40] A detailed understanding of construction challenges is provided in the 23rd EN BN and TFE EN BDE After Action Reports. Construction missions consumed the majority of the battalion leadership tasks as well as engineer company commanders acting as base engineers for TF Commanders. While a complex undertaking, the construction mission did not directly influence the overall military mission in support of political objectives.

[41] 23rd Engineer Battalion, Bosnian One Hundred Day After Action Report (AAR), (Camp Kime, Bosnia: 23rd Engineer Battalion, 15 April 1996), 10.

[42] U.S. Joint Chiefs of Staff, Joint Tactics, Techniques, and Procedures (TTP) for Peace Operations (Final Draft), Joint Publication 3-07.3, IV-6.

[43] Ibid, I-7.

[44] Ibid.

[45] Ibid., I-12

[46] Ibid., I-8.

[47] Ibid., II-6

[48] SGT Jack Siemieniec, "Engineers clear Minefield, Go to Market," TFE Talon Vol. 2, No 34 (September 6, 1996): 5.

[49] Ibid.

[50] U.S. Army Task Force Eagle Headquarters, TFE Joint Military Commission Policies, Procedures and Command Guidance Handbook, (Rodelheim, Europe: U.S. Army Printing and Publications Center, 12 May 1996), 1.

[51] 23rd Engineer Battalion, 1st Brigade, 1st Armored Division Infrastructure Status Report - September 1996, (Camp Kime, Bosnia: 23rd Engineer Battalion, 15 September 1996), 3.

[52] Crocker, Hampson and Aall, 195.

[53] U.S. Joint Chiefs of Staff, Joint Doctrine for Military Operations Other Than War, Joint Publication 3-07, III-12.

[54] U.S. Joint Chiefs of Staff, Joint Tactics, Techniques, and Procedures (TTP) for Peace Operations (Final Draft), Joint Publication 3-07.3, I-3.

[55] Ibid.

[56] Ibid., I-4.

[57] U.S. Department of the Army, Peace Operations, FM 100-23. (Washington,D.C.:U.S. Department of the Army, December 1994), 2.

[58] U.S. Joint Chiefs of Staff, Engineer Doctrine for Joint Operations (Final Draft), Joint Publication 3-34, (Washington D.C.: U.S. Department of Defense, 21 November 1997), IV-11.

[59] U.S. Department of the Army - HQ, TRADOC, Force XXI Operations, TRADOC Pamphlet 525-5, 1-3.

[60] Ibid.

[61] Ready First Combat Team, 1st Brigade Command Briefing - Operations in Bosnia, (Camp Kime, Bosnia: 1st Brigade, 1st Armored Division, 12 December 1996), 3.

[62] U.S. Joint Chiefs of Staff, Joint Tactics, Techniques, and Procedures (TTP) for Peace Operations (Final Draft), Joint Publication 3-07.3, I-17.

[63] Ibid., I-18.

[64] Ibid.

[65] Ready First Combat Team, 1st Brigade Command Briefing - Operations in Bosnia, 18.

[66] Ibid., 13.

[67] The 23rd Engineer Battalion, initially deployed with IFOR from December 1995 to December 1996, was reflagged in March 1997 to the 16th Engineer Battalion. This same unit redeployed in the fall of 1997 as the 1st Armored Division returned to conduct Peace Operations as part of the 6900 man Stabilization Force (SFOR).

[68] 16th Engineer Battalion, 1st Armored Division Engineer Command Briefing - March 1998, (Task Force Eagle-Tuzla Base, Bosnia: 16th Engineer Battalion, 14 March 1998), 7.

[69] Proximity Peace Talks Contact Group, Dayton Accords: General Framework for Peace in Bosnia and Herzegovina, Annex 3.

[70] Johnsen, 4.

[71] Ibid., 6.

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